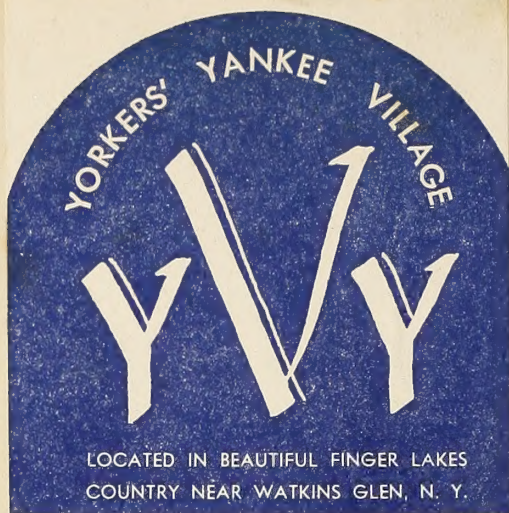


THE GARDEN MAGAZINE



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THE GARDEN MAGAZINE

*Devoted to Planting and Managing the Grounds About the Home
and to the Cultivation of Fruits, Vegetables and Flowers*

Volume XXVII

February, 1918, to July, 1918



GARDEN CITY NEW YORK
DOUBLEDAY, PAGE & COMPANY

1918

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Volume XXVII—February, 1918, to July, 1918

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Tools to Lighten Labor

Fruits for Food, Flowers for Peace

GARDEN

MAGAZINE

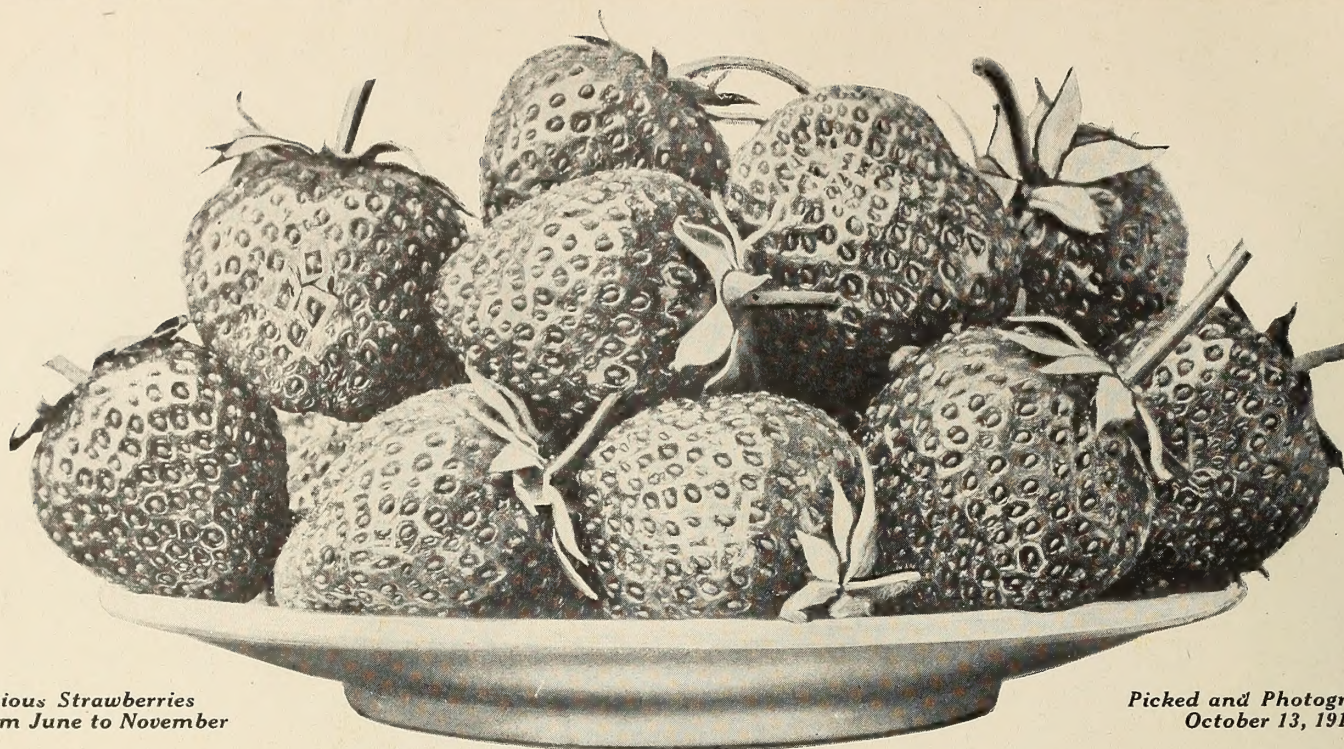
FEBRUARY 1918

PRICE 25 CENTS

"I can not emphasize too strongly the urgent necessity of doing everything possible to bring about a still further increase in the production of all commodities."—Secretary Houston's Report.

This Means: Plant More Gardens, Sow More Seed





*Delicious Strawberries
from June to November*

*Picked and Photographed
October 13, 1917*

KELLOGG'S EVERBEARING STRAWBERRIES

Give Bigger and Quicker Profits Than Anything Else That Grows

KELLOGG'S EVERBEARERS set this spring will produce loads of big delicious berries this year all through August, September and October, and next year they will fruit heavily from June to November. Frost does not affect their blossoms or fruit. Fall strawberries always are in great demand at prices ranging from 30c to 50c per quart.

We want to send you our handsome new 64-page book "GREAT CROPS OF STRAWBERRIES AND HOW TO GROW THEM." This big book has been written by a man who has made strawberries his life study. It tells how KELLOGG PLANTS grown the "KELLOGG WAY" will make more money for you per acre than anything else you can grow. It also gives the experience of many growers who make at the rate of

\$1,000 per Acre the Same Season Plants are Set

—Read What These Growers Say—

W. R. Randall of Illinois made at the rate of \$1900 per acre. R. A. Cable of Colorado made at the rate of \$840 per acre. O. J. Orsborne of Utah made \$33.70 from only 50 Kellogg Everbearers besides supplying his family with berries. Elijah Straight of New Brunswick, Canada, picked an average of three quarts per plant.

We could fill this entire page with similar reports. You can make these same big and quick profits. We will help you. Our big, free book pictures and describes these wonderful Everbearers and tells how to grow them. It also pictures and describes Kellogg Strawberry Gardens.



W. L. FORBES

"I have grown Kellogg Strawberries exclusively for the past 15 years and seldom make less than \$1200 per acre. Last year I made \$2500 per acre from Kellogg Everbearers. Kellogg's strawberry book has been worth its weight in gold to me."

W. L. Forbes, Vermont



MRS. DORA SNOW

"From my small Kellogg Strawberry Garden I sold \$130.00 worth of berries besides all I could use at home. Many of the plants produced two quarts of berries each. I sold my Everbearing Strawberries at 30 cents per quart. Some of the berries were almost as large as peaches."

Mrs. Dora Snow,
Nebraska

Kellogg Strawberry Gardens

Stop paying high prices for common strawberries. Let a Kellogg Strawberry Garden supply your entire family with big, sweet, delicious berries the year 'round without cost and give you a big cash profit besides. Grow them right in your own garden or back yard and reduce the high cost of living. You simply can't afford to be without a Kellogg Strawberry Garden this year. Write for our big, free book to-day. It tells how you can pick berries fresh from the vines from June to November and gives 30 recipes for preparing strawberry dainties for both summer and winter.



A Kellogg Strawberry Garden

Send To-day For Our Big, New Strawberry Book—It's Free

It explains in detail the *Kellogg Way* of growing and selling strawberries, how to grow two big crops of berries each year, how to make one acre do the work of two, and how Kellogg's Free Service will help you grow bigger crops of better berries and make bigger profits. In fact, it gives just the information needed. It also offers big cash prizes to the boys and girls and tells the women folks how to earn their own spending money and how to save on their grocery bills. Beautifully illustrated with actual photographs. 64 pages of plain practical strawberry information and money making facts. Worth its weight in gold—costs you nothing. Your name and address on a postal will bring this book by return mail. Write for it to-day.



R. M. KELLOGG CO.

Box 690

Three Rivers, Mich.



NO. 306 IRON AGE WITH PLOWS ATTACHED

THE JOYS OF GARDENING

Better and Bigger Crops

To get out on a crisp Spring morning and feel the mellow soil crumble beneath the plow-shares of a wheel hoe, to drill the seed, cultivate the plants, all this in an upright position, brings joy to the body in need of exercise. Besides, it carries with it the satisfaction of knowing that the work is done better, quicker and ever so much easier than it could be done in any other way—done as the *market gardener* does it.

IRON AGE

GARDEN TOOLS

have been made by us for many years. We have watched their use in thousands of gardens. To this day, we don't know which, to the home gardener, is the more alluring—the fact that they help produce larger crops with less labor or that it is such a downright joy to push them!

And then, this year there is the satisfaction of knowing that you are patriotically supplying *at least* your own table as your Country asks.

Ingenuity can extend almost indefinitely the usefulness of IRON AGE Tools. The complete set that comes with many of the combination models can be made to perform every duty for which the garden calls. There are plows, weeders, cultivator teeth, rakes, pulverizing discs, etc., designed by men who got tired of doing the work the old fashioned way. The different attachments are changed in a jiffy. Because IRON AGE Tools are built along correct lines they are the easiest to handle and give lasting service. Women and children enjoy raising flowers and vegetables with them, and they are really the safest tools in the hands of the inexperienced.

IRON AGE No. 306 Combined Hill and Drill Seeder, Single and Double Wheel Hoe is the "Complete Gardener." It is a mechanical "handy man" that prepares the soil,

plants the seed, covers it, firms the soil, and marks the next row. An easy change of tools and it is ready to do the cultivating and weeding necessary for the best growing conditions. It does all this *correctly*, making up for the practice which the user may lack. Many other models from \$4.50 up differ chiefly in the variety of their attachments. Nearly all are standardized so that attachments may be bought as desired.



CULTIVATING CLOSE TO YOUNG PLANTS



MAKING A DUST MULCH

A HELPFUL BOOKLET

"Modern Gardening" designed to acquaint garden hobbyists with what they can really do with the various types of IRON AGE Tools is yours for the asking. It explains their construction in detail, shows the best ways of accomplishing the different kinds of work, and how one may do more work than ten men working with old fashioned tools and do it easier.

Write for it to-day—FREE

BATEMAN MANUFACTURING CO.
GRENLOCH **Box 350 C.** **NEW JERSEY**



Write for This Free Guide to Profitable Fruit Growing

That's what our New Catalogue may really be considered.

Through words and pictures it attempts to impress upon the patriotic gardener the vital needs of growing more fruit and still more fruit.

Over half a century's experience in producing fruit trees, a lifetime's experience in studying the relative merit of different varieties for the home garden or orchard, come to your

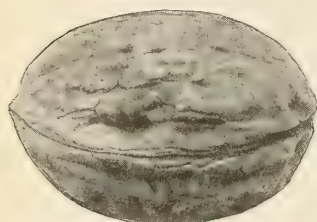
assistance through this book. Let it help you decide what to grow in the Fruit garden. While it will prove an equally useful adviser on problems of ornamental plantings, its principal mission, for the present, is to emphasize the importance of growing more

Fruit as a Food for the Nation

"Eat fruit and save sugar. Eat nuts and save meat" is the editorial advice in January Garden Magazine. If, in addition, you grow your own fruit, you are serving the country in doubly patriotic fashion. To grow one's own fruit, the garden need not be large. Our catalogue offers Dwarf Fruit Trees of all kinds which yield remarkable crops in small space. Then, there are bush fruits and berry plants for growing in beds and along borders. By a judicious arrangement, a fairly representative collection of nuts, apples, pears, plums, peaches, and cherries may be grown in a small garden. With each collection offered below, we supply a blue print giving explicit directions where to place and how to plant the different trees.



Nut Trees as a National Asset



"What finer monument to man's wisdom than stately nut bearing trees!" Easily grown, hardy and enduring nut trees yield regularly increasing quantities of valuable food. Our special strains of English Walnut, Black and White (Butternut) Walnuts, Filberts, defy zero climates. We grow every worth-while variety of Nut Trees, so long as it has stood the very exacting tests to which we subject everything in our nursery. But this rigorous selection relieves the planter of all anxiety. Glen Bros. Hardy Nut Trees come to you true-to-name, healthy, and in vigorous shape for perfect results.

These Collections Typify Glen Brothers' Service

Two Opportunities for Making a Profitable Investment

No. 1 Nut Collection \$5

For \$5.00 we will send you one each of the following Nut Trees:

If bought singly would cost \$8.00

Hard Shell Almond. Hardy and easily grown; tree very showy when in bloom; nuts large, plump and sweet.

Black Walnut. Nuts rich in food value, and with increasing age the wood adds a compound-interest value to the tree.

Butternut. Trees begin to bear their rich, sweet, delicately flavored nuts when very young, and the demand for these nuts is always in excess of the supply.

English Walnut. Its nuts are of greater food value than meat, wheat flour, or potatoes; and the beautiful Circassian Walnut furniture is made from the wood of this tree.

American Filbert. Tree ranks high in ornamental value and bears large crops of sweet flavored nuts.

English Filbert. Nuts of the English variety are large, oblong; kernel plump and of rich flavor; excellent keeper.

No. 2 Fruit Collection \$5

For \$5.00 we will send you Fifteen fine Fruit Trees, as follows:

If bought singly would cost \$7.25

3 Apples. Yellow Transparent. Pale Yellow; crisp, acid; good. Summer. **McIntosh.** Deep Red; juicy; rich, and pleasant. Autumn. **Baldwin.** Large; deep red; crisp and juicy; very productive. Winter.

3 Peaches. Fitzgerald. Large; golden yellow; tender and sweet. Early. **Elberta.** Orange-yellow; mildly sweet or sub-acid. Medium. **Late Crawford.** Greenish-yellow; firm, juicy, richly flavored. Late.

3 Pears. Bartlett. Yellow, red blush, buttery, juicy. Summer. **Seckel.** Probably the richest flavored Pear known; juicy. Autumn. **Lincoln.** One of the best-keeping winter Pears.

2 Plums. Abundance. Bright Cherry-red, with very juicy flesh. **Bradshaw.** Dark violet-red; juicy and pleasantly sub-acid.

2 Cherries. Tartarian. Large; black; sweet and tender; popular variety. **Montmorency.** Clear red; juicy, rich acid.

2 Quinces. Orange. Golden yellow; flesh tender, flavor good. **Rea.** Larger than the Orange; of excellent quality; strong grower.

GLEN BROS., Inc. Glenwood Nursery. Established 1866
1900 Main Street, Rochester, New York



Is Comfort and Contentment a Luxury?

No, certainly not! Just as food is essential to physical comfort, so are flowers and plants necessary to spiritual contentment. More than ever before do we need the soothing companionship of plant life.

800 Acres of Plants, Shrubs, and Trees that will spread Cheer, Happiness, and Peace

No matter what your preference, we can serve you with just the plants you want. Behind us stand the combined resources of two of the oldest, largest and best nurseries in the country.

For the food garden, we grow a complete assortment of fruits best suited to eastern conditions. Only sorts of proven dependability are offered, in different sizes, at moderate prices.

FREE:—Catalogue and Treatise on Evergreens

Let our catalogue introduce you to the choicest stocks of hardy, ornamental trees, shrubs, plants, fruit trees and berry plants grown. Those fond of Evergreens will enjoy our special leaflet. Write for free copies of both TO-DAY.

American Nursery Co., Inc. Singer Bldg. New York City

Grow Your Own Fruit

At a slight initial cost, with a minimum of attention, and with practically no running expenses, your home-plot can easily supply you with delicious, perfect fruit in season. Pears, Peaches, Quinces, Apples, Grapes, Berries, in fact, all

KELLY BROS.

fruits will thrive and bear rapidly and bountifully. The strongest kind of a guarantee is your protection against inferior stock. Our nursery, established in 1880, is famous for hardy fruit trees, as well as choice collections of ornamentals. Our prices permit a considerable money-saving.

Send for Free 1918 Catalogue

Kelly Bros. Wholesale Nurseries
41 Main Street, Dansville, N. Y.



Plant Evergreens for Year-round Beauty

A GLEAM of living green brightens the winter landscape. And stately evergreens contrast strongly with deciduous trees in summer. We offer you more than 60 kinds, including:

White Pines: 1½ ft. to 15 ft. high. A noble native tree that thrives on almost any soil. It grows rapidly—2½ to 3 ft. a year.

Douglas Spruce: An evergreen of enchanting beauty. Steel bluish-green foliage and graceful branches. The tree is very hardy. It is valuable for lawns, for massing and for avenues.

We have Evergreens for every landscape purpose. All are strong-rooted due to frequent transplanting. All our trees are dug with great care and packed while still fresh from the ground—no storing.

Irish Roses: In spite of submarines, we have succeeded in importing a large shipment of genuine Irish Roses—the famous Dickson strain. Planted early, they will bloom this very summer. Our Catalogue lists nearly 200 varieties—all hardy.

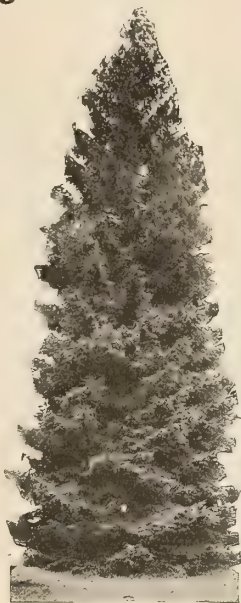
Get your name on our mailing list to receive our illustrated 1918 Catalog and mid-summer and autumn announcements. Write to-day.

ROSEDALE NURSERIES

S. G. HARRIS

Box A

TARRYTOWN, N. Y.



DOUGLAS SPRUCE

Flowers Bring Peace

Yes, flowers bring peace of mind to the war worker. Keep sunny and sweet, in spite of the stress and strain, by growing "The Queen of Flowers." She will respond heartily to your care; her fragrance and marvelous color harmonies will appeal to your sense of beauty, and impress you daily with the wonder of Nature's works.

Start now to plan your summer rose attractions. And let C. & J. guaranteed-to-bloom Roses help you out, with their widely-varied forms and colorings, with sorts adaptable to any climate. And especially consider the

New Chinese "Hugonis" Rose

—the first rose to bloom in the spring. Absolutely unique as regards appearance and habit of growth. The color is intense canary yellow, very bright and attractive. It is really exceptional for its abundance of bloom, and dainty foliage.

The young shoots are a rich crimson in color—an added beauty not seen in many varieties. Hardy as a daisy—suitable for lawn or planting among shrubbery. Own-root pot-plants: 2 yr. size, \$1.50 each, postpaid. Larger 2-yr. plants, by express \$2.00; 3-yr., by express \$5.00. Our supply of this new beauty is limited. Order your plants at once.

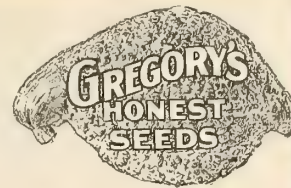
1918 FLORAL GUIDE FREE TO YOU

An interesting and valuable 84-page book that will show you many new possibilities in rose-culture. It lists nearly 400 of the "Best Roses for America"—beautifully illustrated in colors. Remember all C. & J. Roses are guaranteed to bloom.

For 10¢, we send you our instructively illustrated 32-page booklet, "How to Grow Roses," 25¢ return check good on your first \$1 order and our 84-page Floral Guide. Send to-day.

CONARD & JONES Co. ★ **WEST GROVE, PA.**
Robert Pyle, Pres. Box 24
A. Wintzer, Vice-Pres.
Rose Specialists—Backed by 50 years' experience

Home Gardeners Should Order These Special Strains Now



While we are prepared for one of the greatest spring rushes in the 62 years of our business history, the "think-ahead" gardener will not permit himself to get caught in it. The particular varieties which you consider especially adapted to your conditions and your needs may be exhausted, if you delay. Then, too, orders must be filled in rotation—that's the only fair way—and late orders must await their turns, with perhaps thousands ahead.

12 Leaders That Really Lead

Bean, Warren. Perfectly stringless, flat, green-podded sort of great rust resistance. Very prolific. Pkt. 15c.

Carrot, Danvers. Has produced forty tons per acre. Pkt. 10c.

Bean, Bountiful. Extremely early. Tremendous cropper, and the finest flat green podded ever introduced. Entirely stringless. Pkt. 15c.

Parsnip, Abbott's Improved Hollow Crowned. Long roots with smooth clear skin. Does well in all soils. Pkt. 10c.

Beet, Gregory's Impr. Crosby's Egyptian. The most thoroughbred early beet, with handsome roots of best flavored flesh. Pkt. 10c.

Peas, Gregory's Early Excelsior. An exceptionally heavy cropper among dwarf, sweet, wrinkled sorts. Pkt. 15c; ½ lb. 25c.

Cabbage, Copenhagen Market. The largest of the early round-headed sorts. Of truly remarkable quality and a sure header. Pkt. 10c.

Peas, Gregory's Early Morn. The earliest of the large podded early wrinkled sorts, prolific and very sweet. Pkt. 15c.

Lettuce, Gregory's B. S. Tennisball. A firmly folding butterhead variety that is very slow to run to seed. Pkt. 10c.

Radish, Scarlet Globe. One of the earliest round radishes. Grows to good size without becoming pithy or losing quality. Pkt. 10c.

Onion, Gregory's Improved Yellow Globe. A heavy cropper of great dependability. Unsurpassed for winter storage. Pkt. 10c.

Squash, Gregory's Delicious. Unsurpassed in firmness of flesh, dryness, sweetness and exceedingly rich flavor. Pkt. 10c.

Delivered Postpaid

Order Direct from this Advertisement

Order any or all of the above listed seeds, referring to this special offer.

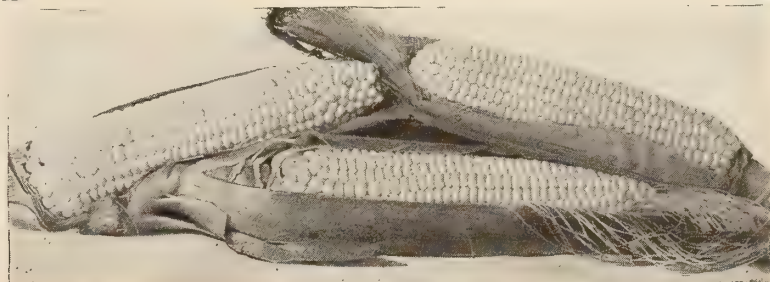
As a *Special Introductory Offer*, we will mail one packet each of these 12 sorts, regular value \$1.40 for \$1.20, postpaid.

When our carefully chosen stocks are exhausted, we prefer to return the money rather than to substitute seeds of unknown origin and doubtful quality.

Send for Our Free 1918 Catalogue

It tells how to make a garden and what to grow in it for assured returns. It is one of the few seed catalogues giving definite information, gathered from our own trial grounds. You will find it a reliable guide to the choicest vegetables and finest flowers. Our prices are moderate indeed, considering the present shortage of good stock. Write for the Catalogue to-day and order now.

J. J. H. GREGORY & SON, 10 Elm Street, Marblehead, Mass.



Cultivate for Liberty with a LibertyWeeder

Shake off the bonds of hardship which a *weedy* garden imposes upon you year after year. The Liberty Cultivator makes short work of weeds. It cuts them off, besides loosening the soil and pulverizing it. The unique shape of the Liberty Cultivator teeth thus stands for triple efficiency.

Easily and Quickly Adjusted

In addition to all the recognized good points of other garden tools, the Liberty Weeder is easily adjustable to any width, from four to ten inches. By simply loosening two wing nuts, the arms may be moved to the desired width. It is one of the easiest cultivators to handle, because the special construction of the teeth makes downward pressure of the tool unnecessary.

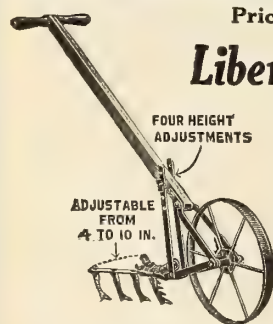


Cultivates both sides of rows at once

For straddling the rows, the centre tooth can be quickly detached. By adjusting the cultivator to the width of the plants in the row the gardener can come quite close to the plants, thus saving a lot of handweeding. See the Liberty Weeder at your dealers or send to us direct. Accept no substitutes. Comes with five feet, polished ash handle.

Price, \$1.50

Liberty Wheel



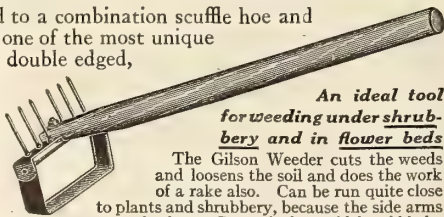
Cultivator Weeder *as shown to left*

presents a combination of the hand cultivator with a wheel frame. The Liberty Cultivator is attached to the wheel frame by means of a patent socket. Can be used with the wheel directly ahead of cultivator for use between the rows, or with the wheel offset, for straddling the rows. Handle adjustable to different heights, cultivator adjustable to different widths.

Price Complete \$3.00

The Gilson Weeder Saves Backache

A six-foot handle, attached to a combination scuffle hoe and rake make the Gilson Weeder one of the most unique garden tools available. The double edged, oscillating steel blade makes every stroke forward or backward count. With it you can do four times the work of the ordinary hoe, with half the effort.



*An ideal tool
for weeding under shrub-
bery and in flower beds*

The Gilson Weeder cuts the weeds and loosens the soil and does the work of a rake also. Can be run quite close to plants and shrubbery, because the side arms act as fenders. Comes in four widths of blade.

Prices: 3 1/2 inch blade, for narrow rows 80c; 5 inch blade, for weeding flower beds, under shrubbery, and general work, 90c; 6 inch blade, for light soils, 95c; 8 inch blade, for wide rows \$1.10.

Write for Free Leaflets describing any or all of the Gilson Garden Tools. Tell us which of above interests you most, and we will tell you which dealer in your neighborhood has them, or we will supply direct. Plan right now to have the most productive garden this year. It will be easy if you keep down the weeds with Gilson Garden Tools. Write us TO-DAY.

J. E. Gilson Company, Port Washington, Wis.

Thorburn's Seeds

Founded in 1802

THIS house has been famous
for the last 115 years for *reli-*
able seeds of all kinds.

Seeds for the
**War Garden
Large Estate
Farm, Lawn
etc.**

Send to-day for new 1918 catalogue, which is now ready for mailing. It lists all varieties of vegetables, flower and grass seeds. Free on request

J. M. THORBURN & CO.

53 B Barclay Street through to 54 Park Place
NEW YORK

IRIS (Fleur-de-lis)

If you have no planting of this beautiful flower, you are missing much of the richness of life. Bearded Iris comes in bewildering array of colors, its petals as delicate and as beautiful in form, texture and color as fairies' wings. The form of this flower has been remarkably improved of late years, and modern varieties show none of the stiffness of the old sorts. The new varieties are a revelation with their broad, rounded petals and their beautiful, globular form of flowers. Earliest varieties bloom the last of March, and others follow up to June 15th, after which the wonderful and stately Japanese Irises appear.

Our collection includes nearly five hundred varieties. Many of them are very rare.

For \$1.55 we will send you this beautiful collection. Actual value, \$2.10

Collection A Tall Bearded Irises

Madame Chereau, White bordered blue
Celeste, Pale sky blue
Queen of May, soft rose
Jacquesiana, Fawn and reddish violet
Mrs. Neubronner, Bright, golden yellow

Kochii, Deep claret
Mrs. G. Darwin, Pure white
Violacea Grandiflora, Bright violet blue
Queen of Gypsies, Dead leaf and dusky yellow

Write for Our New Catalogue

It describes our Irises, Gladioli, Paeonies, Cannas, Hardy Phlox, Dahlias and many other plants and bulbs. It also lists all kinds of flower, field and garden seeds and some *new and rare specialties* which we believe cannot be obtained through any other American Seedsman.

THE WING SEED CO., Box 1426, Mechanicsburg, Ohio
(The House of Quality and Moderate Prices)

Have Your Own Vegetable Garden

Select such varieties as are best adapted to your own wants. If you need assistance mail a postal card to
FOTTLER, FISKE, RAWSON COMPANY, The Faneuil Hall Square Seed Store, Boston, Mass.

Our Seed Annual will be mailed Free at once. It is complete—and yet concise and to the point. Full of lifelike illustrations



We Especially Feature:

**VEGETABLE SEEDS —
FARM SEEDS.**

Implements most useful in home gardening.

The best fertilizer to use.

The insecticides proper to use for the destruction of the various insects.

Our practical experience of over forty years in the growing and caring for seeds puts us in a position to give our customers the benefit of our long experience.

This Seed Annual that we mail free contains not only 60 pages devoted to Vegetable Seed but you will find over 30 pages devoted to Flower Seeds; 30 pages to Dahlia and Gladiolus with over 50 illustrations of the best varieties; and 30 pages to Roses, Perennial Plants, Shrubs, etc., as well as several pages on Poultry Supplies. This book is sent free to all who write for it—a postal will do.

FOTTLER, FISKE, RAWSON COMPANY, Faneuil Hall Square, Boston, Mass.

A New Apple! Stark Bro's Latest Triumph!

The golden reward of a century's search. Queen of all yellow apples. The greatest fruit development since Stark Delicious—master of all red apples, was given to fruit lovers by Stark Bro's Nurseries.

Fruit lovers have long longed for a yellow apple combining delicious flavor, great size and young bearing, late keeping and hardy tree characteristics. "Golden Delicious" is the answer. Jos. Gerardi, the fruit expert, declares: "I foresee

Golden Delicious

the first choice of our orchards." The branch shown at left, is a "top graft" inserted 18 months before photo was taken. In 18 months that graft grew and bore this fine crop of extra large golden fruit! Nothing equal is recorded in all our 102 years of history.

This apple will prove a "treat" to every family who plants it. Learn more about it—and all Stark Bro's Improved Varieties of Fruits. Write for

2 Books That Will Show the Way to Sure Fruit Money—FREE

1918 marks the beginning of greater-than-ever fruit profits for fruit raisers. These books tell why you now face money-making opportunities! They post you on all Stark Bro's Improved Young-Bearing Varieties of Apples, Peaches, Pears, Plums, Cherries, Berries and Grapes. Get our Special 1918 Price Offers, and Freight Prepaid Offer. Write for both to-day.

Stark Bro's Nurseries
Box 121 Louisiana, Mo.



Farr's Hardy Plant Specialties

(sixth edition)

The most complete and helpful book of hardy garden PERENNIALS, SHRUBS and TREES that I have ever issued.

SPECIALTIES FOR EARLY SPRING PLANTING

New French Lilacs, Philadelphus and Deutzias—a complete collection of Lemoine's new creations.

New Japanese and Asiatic Shrubs—new cotoneasters, enkianthus, berberis, flowering cherries, corylopsis, etc., for the border and rock garden.

Dwarf Evergreens—rare specimens for formal gardens, lawn groups and rock garden plantings.

Peonies—the most complete collection of herbaceous and tree peonies in the world.

Irises—many novelties of my own raising. (Awarded the Panama-Pacific Gold Medal.)

Perennials, phloxes, asters, delphiniums, chrysanthemums, etc., etc.

This book containing 112 pages of text, 30 full page illustrations (13 colored plates) is already in the hands of most well informed gardeners, but if you have not received it, or it has been mislaid, a copy will be sent to you promptly on request.

BERTRAND H. FARR—Wyomissing Nurseries Co.
104 Garfield Avenue, Wyomissing, Penna.

Little Trees at Little Prices

FOR EVERY PURPOSE

from Little Tree Farms

Birthplace of Little Trees That Live

Why you should buy trees and shrubs this year and why you should buy them early!

Before the war Europe supplied a large portion of the nursery stock used in America. That source of supply is now cut off. American nurserymen have curtailed production during the past two years. Consequently there is bound to be a scarcity of planting material and prices will be correspondingly high.

Be Forehanded—Save Money

Buy little trees now,—plant them out for borders and edging for your vegetable garden. Employ the Little Tree Garden idea and set the trees out without additional labor; they will require practically no care; they will add beauty and charm to your vegetable plot; and they will be increasing in size and value all the time.

A Little Tree Garden on Your Property means

it is always planting season with you

How many times while walking about your estate have you thought "A little blue spruce would 'brighten up' this corner" or "A few shade trees right here would be just the place to swing a hammock this hot day," or "I wish that objectionable view on my neighbor's property was screened from sight, or "A mass planting of Japanese Barberry with its bright red berries would be cheerful in the fall and early winter," or "A privet hedge is just what I need on the front of my property," etc? With a Little Tree Garden you can carry out these small plantings with your own stock when the spirit moves.

Sample Bargain Combination for Little Tree Garden

52 PLANTS FOR \$18.00

This combination is comprised of eleven very desirable species for American planting—all American-born and American-grown. Below are listed the varieties, sizes and quantities of each that make up the combination.

5 Silver (Concolor) Fir.....	1 1/2 to 2 feet tall
2 Juniper; Red Cedar.....	2 to 3 feet tall
5 White Spruce.....	1 to 1 1/2 feet tall
5 Blue (Colorado) Spruce.....	1 to 1 1/2 feet tall
5 Red (Norway) Pine.....	1 to 1 1/2 feet tall
5 Douglas Spruce (Fir).....	1 to 1 1/2 feet tall
5 Arborvitae (White Cedar).....	1 to 1 1/2 feet tall
5 Sugar (Rock) Maple.....	4 to 6 feet tall
5 Red Oak.....	2 to 3 feet tall
5 Japanese Barberry.....	1 to 1 1/2 feet tall
5 Regel's Privet.....	2 to 3 feet tall

52 Plants for only \$18.00

This high quality stock has been twice transplanted and root-pruned. These prices include packing and delivery to the transportation company at Farmington, Mass.

2 of these combinations—105 plants—for \$ 34.00
10 of these combinations—525 plants—for 125.00

Send to-day for our new 1918 illustrated tree catalogue in which are listed twenty million forest, shade and ornamental trees.

Write for information; tell us under what conditions you wish to plant. We will help you select the trees and shrubs best suited to your conditions and your objects. Your letter making specific inquiry incurs no obligation and will have careful and prompt attention.

Little Tree Farms (NEAR BOSTON)
NURSERIES OF

American Forestry Company

Division A, 15 Beacon St., Boston, Mass.



The War-Time Flower Garden

NO one, who has an atom of joy, or sympathy, or love of the beautiful in his make-up, will venture to classify Flowers, among the "Non-essentials." Better another meatless or wheatless day per week than Flowerless Days all summer.

Resolve therefore to "Grow Flowers as Usual"—to grow Asters and Sweet Peas, and Cosmos, and Nasturtiums and all the other old time favorites. Grow them for the table and living rooms to brighten somber days: grow them to give joy to the heart on festal occasions: grow them to carry messages of love and sympathy to those who are sick or sorrowful and need their cheery companionship: and grow them for inspiration, for mental relaxation, for health-giving exercise.

Heatherhome Flower Seeds

have proved a revelation to American Gardeners. We have in past years developed many wonderful creations that have never yet been equalled. This year we again have several marvelous novelties that all garden lovers should grow and enjoy. In order that every reader of this magazine may obtain these choice beauties and thus become intimately acquainted with the surpassing merits of Heatherhome Seeds, we make the following unusually liberal and attractive offer:

Send Us One Dollar

and we will forward post-paid the following Heatherhome Collection of New Creations for 1918: If bought separately, these seeds would cost \$1.35.

- 1 large packet American Beauty Aster—a magnificent new variety of the late branching type. An unusually strong grower, with enormous blossoms of a rich deep pink, the exact color of the American Beauty Rose. Regular price 20c.
- 1 large packet of four new Midsummer Giant Crimson Cosmos, blooming from July to Frost. Flowers fully as large as the late sort and of a clear glowing crimson. Regular price 25c.
- 1 ounce Sweet Peas, "Heatherhome Beauties." Not a mixture, but a blend of 120 distinct varieties grown separately—Includes all the latest novelties of merit. Regular price 25c.
- 1 large packet of the lovely Nelrose Snapdragon, with delicate pink flowers, of the same shade as the Hermosa Rose. Plants semi-dwarf: bloom from July to Frost. Regular price 25c.
- 1 large packet of the new and striking Calendula, Orange Glory—color a really glorious shade of brilliant golden orange. Blooms from July to November. Regular price 15c.
- 1 large packet of our special strain of Jumbo Zinnias. Monster flowers 4 inches in diameter in white, pink, gold, scarlet and crimson. Regular price 10c.



Special Inducement—With orders received before March 1st, 1918, we will include free, a large packet of our charming new *Dianthus*, Pink Delight, the latest and loveliest variety of the popular Japanese Royal Pinks.

Our 1918 Catalogue is Ready

We have called it "The War-Time Flower Garden." It lists nothing that is not well worth growing: all undesirables have been discarded. Yet it covers everything in Seeds, Plants and Bulbs, that is essential to the perfect garden. Shall we mail you a copy? Let us know quickly, as stocks particularly of European-grown specialties, are limited and you must order early to avoid disappointment.

Heatherhome Seed and Nursery Company

258 Fifth Avenue

New York City

THE GARDEN MAGAZINE

FEBRUARY, 1918

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LEONARD BARRON, EDITOR
Published Monthly, 25c. a copy. Subscription, Two Dollars a Year.
For Canada, \$2.35; Foreign Countries, \$2.65.

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DOUBLEDAY, PAGE & COMPANY
GARDEN CITY, N. Y.

CHICAGO: Peoples Gas Bldg.
LOS ANGELES: 412 W. 6th St.
F. N. DOUBLEDAY, President
ARTHUR W. PAGE,
HERBERT S. HOUSTON,
Vice-Presidents

BOSTON: Tremont Bldg.
NEW YORK: 120 W. 32nd St.,
S. A. EVERITT, Treasurer
RUSSELL DOUBLEDAY,
Secretary

Entered as second-class matter at Garden City, New York,
under the Act of Congress, March 3, 1879



This house of Miss L. R. Edgar's at Newport, R. I., is radically different from the one below

GREENHOUSES

A Vital Point You Might Overlook

LOOKING casually over the fence at a neighbor's greenhouse, it may seem to you quite like many others you have seen.

But should you take the time to compare the kind we build, with other builds, you would be surprised at the difference.

If you would then go a step farther and accept an invitation to visit some of our houses, with one of our experts, you would be still more surprised at the additional differing features of importance he would point out.

With greenhouses, quite like anything else you buy, it's not what you pay for it that is the important thing—but *what you get* for what you pay.

Will you accept an invitation to visit some of our houses?

Do you want the new catalogue?

Hitchings and Company

General Offices and Factory—Elizabeth, N. J.

NEW YORK
1170 Broadway

BOSTON
Tremont Building



Aside from its larger size and different work room, this one looks practically the same as the one above. Both are our houses. Still, one of them is better than the other. Which would you say is the best?



Euonymus radicans vegetus.

The Best Evergreen Vine for America

Is ivy the best vine in the world? Doubtless every Englishman will cry "Yes!" because the European or English ivy (*Hedera Helix*) is the oldest evergreen vine in cultivation and has made the deepest impression in literature, art and history. But if your standard is merit, not associations, there is another vine which seems to me inherently better, viz., the Climbing *Euonymus*, or, as I now propose to call it, the "Evergreen Bittersweet." True, the form of its leaf is not unique, like that of ivy, but it has one overwhelming advantage in its gorgeous red berries, which are resplendent all winter against a noble background of evergreen foliage. And in many other ways it has greater value than ivy, even in regions where the ivy is hardy.

The accompanying picture gives but a faint hint of the five-fold glories of the Evergreen Bittersweet. In the first place, it is evergreen, and therefore has an obvious advantage, over deciduous vines in being beautiful 365 days of the year, instead of two weeks or seven months.

Secondly, it is very accommodating as to soils, climate, exposures; is easy to grow; and will trail over the ground or climb to the noble height of 30 feet.

Thirdly, it has an immense advantage over ivy, in being much hardier, growing 20 feet high in New England where ivy can be grown only as a ground-cover.

Fourthly, its superb red fruits, which closely resemble those of our common wild bittersweet, seem divinely appointed to redeem our American winters from their bleak, ugly and cheerless moods.

And, fifthly, it promises to develop a strong American character, becoming universal and dear to the American heart. If I had a million dollars to

spare I should like to plant an Evergreen Bittersweet against every stone, brick and concrete wall in America. The effect would be electrical, for it would add 100 per cent. to the beauty of America. And it would only be anticipating by a hundred years what will surely happen, for it is hardly possible that the world holds any plant with greater power to transform a house into a home. As in England every home and every church is enriched, dignified and ennobled by ivy, so every American home will come to be connected so closely with the Evergreen Bittersweet that it will be impossible to think of one without the other.—Wilhelm Miller, in *THE GARDEN MAGAZINE*, November, 1912.

We have known for several years of the great merit of the vine, *Euonymus radicans* vegetus, so enthusiastically described by Professor Miller, and have been steadily getting up a large stock of it, and now have several thousand plants. It is a sport from *Euonymus radicans*, but absolutely distinct from that vine.

Planted in rows and kept sheared this vine makes a splendid evergreen hedge. It is also a splendid ground cover plant for either sun or shade.

Perfectly hardy, but when planted in the fall should be protected with a mulching of three inches of stable manure, being careful not to cover the evergreen foliage. Very slow growing at first, but when well established grows with great vigor.

Small pot-plants, 30 cents each, \$2.50 per dozen, \$20.00 per 100. Strong pot-plants, 50 cents each, \$5.00 per dozen, \$35.00 per hundred.

Illustrated Descriptive Catalogue for 1918 is now ready and will be sent free on request. It contains the most comprehensive list of trees, shrubs, Hardy plants, and seeds offered in America including many choice things not obtainable elsewhere.

ELLIOT NURSERY CO.

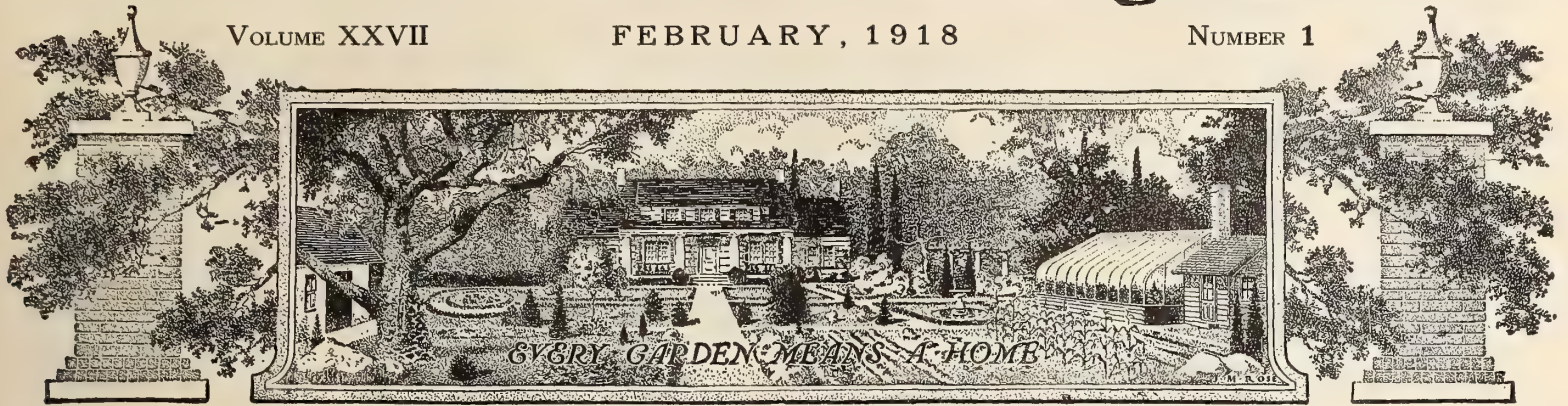
326 Sixth Ave., Pittsburgh, Pa.

The Garden Magazine

VOLUME XXVII

FEBRUARY, 1918

NUMBER 1



AMONG OUR GARDEN NEIGHBORS

Facts About the Seed Supply

BELIEF in an assumed scarcity of seeds for the coming gardening season has seemingly caught those of the general public who are not in a position to get at the actual facts. Inquiries from readers led us to make an investigation on their behalf, and we are able to present the following positive details:

A normal supply of all important kinds of vegetable seeds is on hand, though crops of certain varieties were severe failures. However, in view of the fact that the demand promises to be abnormal, against a supply that is just about normal, it behooves every one to husband resources.

Seed shortages, due to very poor crops, are particularly severe in beans, peas, corn, and tomatoes; the shortage, however, does not affect all types alike. For illustration: California contributes a full supply of lima beans and pole snap sorts. Among bush beans, the green-podded kinds are more abundant than most wax-podded kinds. Again, a few wax-podded sorts have yielded better crops than others. It becomes necessary, therefore, on the part of the buyer to more thoroughly study *types rather than varieties merely* as was advocated at length in last month's GARDEN MAGAZINE (page 197).

How the selection of *types* rather than varieties may be made to affect your seed order is shown by the case of the dwarf peas. Seeds of Little Marvel, a most popular variety, are exceedingly scarce; yet Nott's Excelsior and Sutton's Excelsior, of the same habit of growth (type) are abundant. The relative valuation, or prices put upon the different sorts by the dealers, may be taken as a fair indication of how stocks stand. The patriotic gardener will let careful consideration of all factors determine the details of his order.

As regards the particular kinds of vegetables mentioned above, good care should be exercised to hold every seed to strict accountability. Remember that a "packet" of tomato seeds contains between 300 and 400 seeds. Since the vitality of tomato seeds is very strong for many years, don't waste any. Neither waste corn nor beans by premature sowing of seeds in cold ground. If extra early crops are wanted, start seeds in paper pots in the house and transplant.

A supply of seeds that promises to be equal

to any demand is on hand of beets, cabbage, carrots, kohlrabi, parsnips, turnips and other root or winter crops suitable for storing. These are the very kind of crops of which more should be grown, for the sake of the economic strength of America. Every vegetable available between Thanksgiving and Decoration Day is worth two or more gathered for consumption during the summer months.

The flower seed situation is in very much better condition than it was a year ago. Separate colors of the rarer among popular annuals which were then almost out of the market, now reach us from England in sufficient quantities to meet all demands. California is contributing her normal share of Poppies, Nasturtiums, Sweet Peas, etc., etc. For such seeds as the Golden State is able to grow in quantity, California has become the supply house of the world and we are therefore able to tap the supply at its source! In Colorado the flower seed industry has developed marvelously, too. The seed-growing sections of Ohio, Michigan, New York, etc., have contributed their due quota of nearly all flower seeds in usual demand for beautifying home gardens throughout the country.

The gardener will, of course, be reasonable in his expectation of results from seeds sown and not be unduly exacting over possible variations of behavior among either vegetable or flower seeds. The seed world finds itself in an absolutely unparalleled condition. Many of Europe's seed growers are in the trenches; many of America's seed growers have lost their most skilled help. In an endeavor to make up for crop shortages of 1916, farmers new to the fine details were persuaded to enter the ranks of seed growers and do a new thing in 1917. The crops were harvested with all possible precaution; yet, the most enthusiastic seedsmen this year preach conservatism in expectation which, even in normal times, is often allowed to run away from good judgment.

Flower Gardening in War Times

THOSE of us who must remain at home owe as a duty to those others at the front that we live sane and calm lives, thus enabling us to render to them our fullest measure of service.

Calmness and sanity are products of natural

living. To be effective in troublous times means that we must hold to those things of life which bring contentment and restoration of spirit. The Maker placed Adam and Eve in a garden. Presumably it was His intention that a garden should furnish the greatest happiness and the loveliest surroundings in this life.

We who love gardens have reason to be thankful. Gardening is a relaxation. The refining and soothing effects of digging in a garden are the more keenly to be appreciated in war times because it is the very antithesis of the stress and turmoil of the cannon and the strife of battle. Nature's wholesome breath is like a benediction. We who make gardening our hobby are glad of the broadened appreciation of our hobby brought about by the Government's urging the people to plant gardens. We are proud, too, because of the happiness and contentment our new found co-workers have discovered in growing things.

The fact that our brothers are "over there" is no reason why we should demand that the sun stop shining, that the beauties of Nature cease to be, or that the songs of birds be stilled. Flower gardening is just as useful in these war times as vegetable gardening. Flowers are food for the soul, stabilizers of the emotions. More than ever do we need these things now—these signs of the Maker's goodness and love—these "triumphant assertions that a ray of beauty outvalues all the utilities of man."

It is correct and proper that we in these times plant flowers and grow beautiful things. It was intended from the beginning of things that flowers should give us cheerfulness. Was there ever a time of more need for cheerfulness than in these days when so much is happening to unsettle our thoughts? Grow flowers! Grow more flowers! Grow still more flowers!

The Sinews of War

THE nation's need in the conduct of the war necessitates the support of each individual. There can be no exceptions. The present business of the United States is WAR. It can be won only by the united and continuous coöperation of every man, woman, and child. Besides devoting energy to the production of food materials, the people are called

upon individually to lend their money. Two loans have already been absorbed. The third, which will probably be greater than the others, is not far distant. The money must be contributed by concerted effort of all the people consecrated to the great task which lies before us. Those soldiers and sailors of our families who are rendering sacrificial personal service must be supported by the others who can only give or lend of their material possessions. A matter demanding immediate attention is the Income Tax return. This must be made (before March 1) to the proper authorities by every individual whose income in any way whatever exceeds \$1,000 a year.

Hastening Germination of Hard Seeds.—

Many seeds such as Canna, Kentucky Coffee tree, hardy Locust, and to a less extent Sweet Pea, are very slow to germinate because of the bony coverings around their "kernels." Many a Moonflower, Wild Cucumber and Abyssinian Banana seed have I filed, cut or soaked in boiling water to hasten germination. While the holes admit water and thus are satisfactory the process is too slow; and while the hot water is a quick and easy way of treating a lot of seed at a time it does not prove as effective as could be desired. A year or so ago a friend who had heard of the use of sulphuric acid for the treatment of cotton, alfalfa and clover seeds, which are often "hard," tried some experiments with the boniest seeds he could get at the time—those of the Kentucky Coffee tree. These seeds had lain beneath the parent tree from the previous fall more or less covered and thus kept moist by leaves and leaf mold. Not one had shown the slightest inclination to swell, much less sprout. They were placed in a convenient sized beaker glass and covered with concentrated sulphuric acid (specific gravity 1.84, the strongest obtainable). They were left in contact with the acid for one hour, when the acid was drained off and the seed washed free from acid with water. Next they were planted (July 15) in flower pots filled with ordinary good soil and the pots plunged rim deep in a shady, moist place. Untreated seeds were similarly

planted, but up to the time that the photograph of the successful ones was taken forty-one days later (August 25) not one had sprouted. Considering the extreme slowness of this plant the growth of about six inches of stem and a spread of nearly a foot is surely remarkable. Other hard seeds have also been experimented with. In the case of Sweet Clover (Melilot) and other seeds of similar size and character a treatment of 30 minutes has been found to give satisfactory results. He has also tried the plan with Sweet Pea seed and thereby has increased the germination by 25 per cent. From these data he believes that any seeds that have hard coats may be benefited by such treatment. The "acid method," while not so strongly practised by nature, is nevertheless utilized; for the seed coats of many fruits are softened by the natural acids produced by, or at least allowed to act upon, the pulp if the fruit decays on the ground protected by leaves, or when they pass through the digestive apparatus of animals or birds, thus coming in contact with the hydrochloric acid in the stomach. Doubtless the fruity coverings of peach, cherry, and plum pits; of apple, pear and quince seeds; the pods of Honey Locust and Kentucky Coffee trees not only tend to keep the seeds from drying but they aid germination by adding more or less acid as they decay.—*M. G. Kains.*

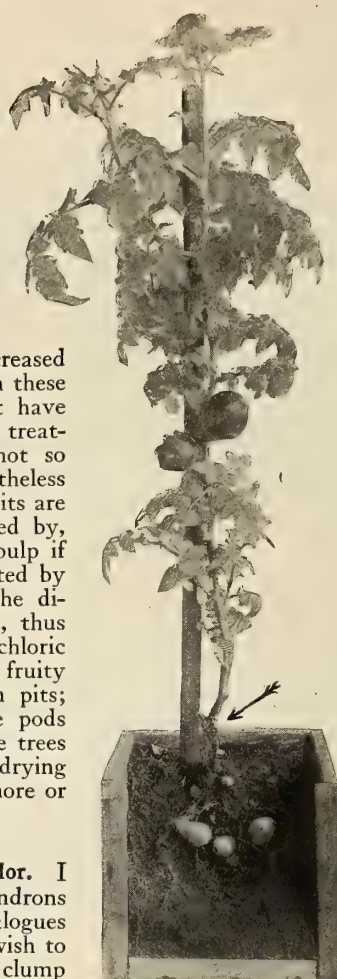
Help! Help! Rhododendron Color. I would like help with some Rhododendrons as to color for I find that no two catalogues agree as to just what the color is. I wish to make a clump containing red, another clump containing pink, another clump containing white and a fourth clump containing purple, lavender and violet varieties. There is so much magneta in many of the Rhododendrons that clashes with most other colors, that it almost requires an expert to separate these so there will be no clashing of colors and if you can yourself or get some expert to arrange in four clumps as indicated above, the varieties listed herewith

Alexander Dancer
Atrosanguineum
Charles Dickens
H. H. Honeywell
H. W. Sargent
Album Elegans
Boule de Neige
Catawbiense Album
Everestianum

Mad. Smits
Henrietta Sargent
Ignatius Sargent (The Boss)
Lady Armstrong
Mrs. Charles Sargent
Caractacus
Roseum Elegans
Catawbiense Grandiflorum

it would be greatly appreciated.—*W. E. Davis, Jr., Conn.* [Now then, let the colorists speak out in meeting.—*Ed.*]

Urge Daylight "Using."—If the Daylight Saving Bill passes the House, as it has already passed the Senate, it will give an hour's time of daylight during the spring and summer months to those who now arrive at home too late in order to take any active part in garden development. Twelve European countries have availed themselves of the benefit of this act. The reports are uniformly commendatory. It would be the height of folly for us not to secure similar advantage. We would save a million tons of coal, increase our farm product tremendously, have greater opportunity for recreation and physical culture, as well as sports. Labor and capital unite in support of the Daylight Saving Bill and with proper public approval, it should pass the House within a few weeks. I hope that THE GARDEN MAGAZINE readers will



Is this plant doing double work? Tomato grafted on potato bearing fruits and tubers at the same time

take an active part in pushing the bill. If each man and woman, who would like to have an extra hour during the spring and summer afternoons to spend in the garden, would write to his or her Congressman and Senator, the effect would be unquestionable.—*Marcus M. Marks., President, National Daylight Saving Association.*

—The short note in the January issue of THE GARDEN MAGAZINE on Daylight Saving is very timely. As an interested reader, let me urge you to hammer away on this campaign. Let us have something on the question of Daylight Saving in every issue of the magazine until Congress has made this a reality.—*Fred. L. Merritt, Mass.*

—We thank very many readers for their similarly expressed views.

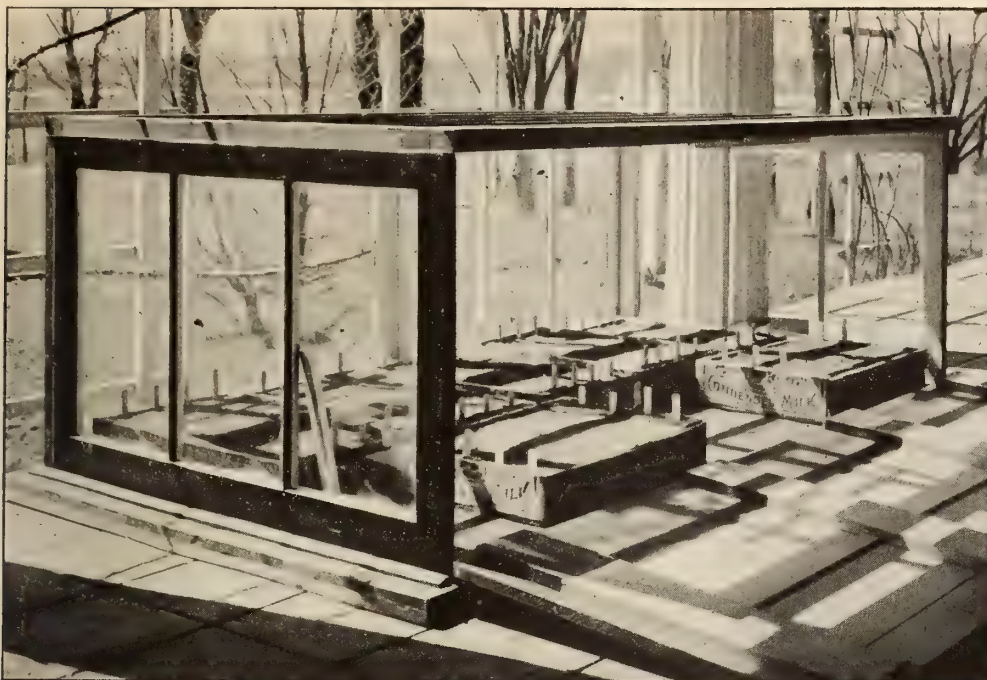
Tell your Senators and Congressmen what you want.—*Editor.*

Here it Is Again,—the "pomato" or "topato" (or anything you chose to call it), the ever-recurring curiosity of a tomato vine grafted on a potato stalk. While it is frequently hailed (in yellow journalism) as a wonderful achievement, it is really the most logical union of two closely related plants. The potato, *Solanum tuberosum*, has the same blood running in its veins as the tomato, *Solanum lycopersicum*. The arrow points to the "graft," as performed by the well-known "true blue" tomato crank, my friend, Robert Livingston. He had the box built especially with a removable side, which could be taken out and replaced without disturbing the whole ball of earth. Whether or not the combination—culture of the two vegetables as one—can be made so profitable as to be practical, has so far defied the analysis of experts, I think.—*A. K.*

Winter Protection for Biennials.—Many growers still labor under the delusion that winter mulchings are given with the idea of keeping plants warm. In some cases it is true they are applied to keep frost from the roots of certain shrubs, but in the case of hardy perennials, bulbs, strawberries and biennials the mulch is designed rather to keep frost in and prevent the ground from being heaved when thaws occur in late winter or early spring. And I always like to wait until December or January before



Treating the seed with strong sulphuric acid resulted in this development in forty-one days, when untreated seed had not swelled



KNOCK DOWN FRAME FOR STARTING SEEDS

Can be set up in a few minutes and placed wherever convenient. Mr. J. Hayward of Hackensack, N. J., describes the detail thus:

The base or floor on which the frame rests and the door, are made of T & G roofers—the cheapest kind of lumber. The floor is 3'-6" by 6'-6" on which is placed 1" by 1" strips in which the 2' by 3' cellar sash fit. Two are used to make the front and one for each end. The back is a solid door made of the same material as the floor. Over the top is placed an ordinary 3' by 6' cold frame sash which completely closes in the frame.

The frame is ventilated by leaving the door open or raising the top. The idea of making the sides 2 feet high is to accommodate high plants—if only small plants are to be grown sash 12 inches high could be used in place of the 2 foot sash

applying any covering to such plants as Canterbury Bells, Foxgloves, Rockets, *Coreopsis grandiflora*, Hollyhocks, Double Daisies, Violas of the bedding type, Pansies, Sweet Williams and Forget-me-nots, all of which are usually treated as biennials, although some are perennials. If given well drained ground, not mulched until the ground is very hard frozen and then lightly covered with dry leaves, stems or hay which can be conveniently and neatly held in position with some decayed manure or even loam spread with a fork, applying just enough to hold the covering from blowing away, there should be very few losses even though minimum temperatures of 15°–25° below zero are recorded. The main reason why so many fail to successfully winter the plants named is that too much covering is applied, and while the ground is soft. We rarely lose any plants here, but we always mulch late and then lightly.—*W. N. C., Mass.*

Canterbury Bells and Foxgloves in Winter. May I enter a protest against the malignment of Canterbury Bells and Foxgloves as to their hardness? (See November issue, page 119.) We have very severe weather in Michigan, sometimes, as last winter, the temperature going to 27 degrees below zero and that, too, with only two inches of snow for protection. My Foxgloves went through perfectly. The Canterbury Bells not so well, but it was entirely my own fault, as they were planted too late in the season to get a good start and so did not have the constitution for such a trial. The covering, particularly manure, that is loaded upon plants to keep them "warm" during the winter, is almost entirely the cause of the loss of plants. All plants that retain their foliage during the winter must "breathe." In other words, the crown must be left open. I have found corn stalks and leaves ideal covering for such plants, using the leaves on the ground around the plant and the corn stalks over them, to give

the air a chance to circulate. If there is an ice storm during the winter, that is, rain and freeze, forming a sheet of ice over everything, I go out and walk all through my borders to break the ice up and let the air in or they will soon smother. And I have very little loss during the winter. Another thing an old gardener told me several years ago was to remove the larger outside leaves of Foxglove in the Fall as they mat together and decay. I have found many plants supposed to need protection to be perfectly hardy under proper conditions. All plants want is a congenial environment. Quite often a plant will die out in one position and flourish in another in the same garden. Which proves soil and position to be much more important than climate. [With which deduction we are most cordially in accord—*Ed.*]—*Mrs. H. W. Wolcott, Jackson, Mich.*

Apple scald of green and ripe fruit in storage can be easily prevented by an occasional renewal of the air of the storage room, according to a discovery of the United States Department of Agriculture, just reported. The basis of the discovery is the fact that apples are living organisms which breathe and, like other living things, have ventilation requirements which if not met lead to smothering. The lack of air movement in the storage rooms, and the depositing of moisture on the fruit, are factors that may play a part in the production of scald. The experiments indicate that high humidities may be maintained in storage without the development of scald, and prove conclusively that an occasional renewal of the air of the storage room will completely prevent the disease. Scalded fruit is more mealy and poorer in flavor than unscalded and is also extremely susceptible to storage rots. Scald increased with an increase in temperature from 41 degrees F. to 68 degrees F. but higher temperatures were unfavorable to the disease and with

certain varieties such as Grimes Golden 32 degrees F. was more favorable to the development of the disease than 41 degrees F.

Grafting Cactus.—Many of the pendulous Cactus, such as certain kinds of *Cereus* and *Epiphyllum*, do much better when they are raised up well above the soil. For this purpose grafting is employed, and it is simplicity itself. In this way good-sized specimens, that will flower freely, are readily produced. The stock on to which the graft is to be made would suitably be one of the upright species of *Cereus* or *Pereskia*; naturally this should be well rooted. For the making of a graft it is best to choose the period of most vigorous growth, that is in the spring. The graft may be of a good size as can be seen in the photograph. The parts which are to be joined must be cut cleanly so that there is a good fit. The lower part of the graft is fashioned in the form of a wedge, and this is fitted into the opening in the stock. Bind the joint around with raffia or similar material firmly, but not too tightly, or the flow of sap will be checked. A position away from the sun should be accorded to the newly grafted plant, and the union will come about all the more quickly if a close atmosphere is maintained. Very little water is given to the soil until the union of the two parts is complete, and the graft is seen to be growing. In the case of a tall stock it is possible to graft two different kinds of Cactus, and, in this way, form a very novel plant that bears distinct sorts of flowers.—*S. Leonard Bastin.*

To increase France's crops and to lighten the burden of toil on her old men, women and children, the United States Food Administration will ship 1,500 farm tractors to that country. The first hundred went early in January, and the whole number will be in France by March, in time for the spring plowing. They are expected not only to be of immense service to France, but to release added tonnage for the Allies and American troops by increasing the amount of food produced there, thus decreasing the amount of food that must be shipped from America. The idea originated with former American Ambassador to Turkey Henry Morgenthau and his son, Henry Morgenthau, Jr.



Grafting Cactus is particularly easy as the parts do not dry out

THE MONTH'S REMINDER, FEBRUARY 1918

The purpose of the *Reminder* is to call to your attention the things which should be thought about or done during the next few weeks. For full details as to *how to do* the different things suggested, see the current or back issues of THE GARDEN MAGAZINE. (An index of contents is prepared for each completed volume, and is sent gratis on request, the Readers' Service Department will also cite references on any special topic if asked—that's its job.) To get the full benefit of this "Reminder," check off with a pencil (v) in the square provided for that purpose before each paragraph, the items that apply to your own case, and use the page as a reference list.

THIS is the last chance to be fully prepared for your war garden campaign—act!

It is pretty wintry yet; but work must begin in earnest before the end of this month, if things are to be comfortably under control later.

Before work, PREPARATION! Are you prepared? Have you done up to date *everything* there is to be done, to be ready for the year's work?

Look over last month's Reminder. Check up. Order at once what you haven't ordered and may need. Stocks are short in some cases—help is short—railroads are short—everything makes for delay in getting seeds and supplies through this spring. Order now! But order intelligently. Remember to study types rather than varieties and help the seedsmen by giving him leeway with your order so far as possible. Read carefully the editorial on page 9.

In the Garden

PLANS complete? If not, get busy. First steps in actual work can't be taken profitably until you know all that you expect to do.

Order at once: Early cabbage, beets, lettuce, kohlrabi, cauliflower, onions—sow these in the first batch. Tomatoes, peppers, celery—in the second. Lima beans, melons, corn, squash, in paper pots, in the third. Be sure to have seeds, soil, flats, pots, etc., on hand before actually needed.

☐ *Manure.* Nothing to be gained by waiting. Sooner it's on the premises now the better.

Think *now* of all the little garden helps you'll have use for later—plant forcers, plant stakes, trellises, stakes to hold pea-wire, row markers, wire tree protectors, lath, Sweet-Pea supports, etc., etc.

In the Flower Garden

MAKE up your mind! What flowers are you going to want this year? Don't do the old stunt of waiting until the 29th of May, and then getting what you can find left over at the local florist's.

☐ Buy your Sweet Peas early—and then start them early under glass. Get small pots—paper are the best for this purpose. About two inches in diameter and very deep. Two or three seeds to a pot, thinned to one plant. Little twigs will keep them upright. Grow cool; and harden off thoroughly.

☐ Now is the time to make changes for the better—in your mind's eye, and noted on paper. Do the work later on.

☐ Phlox lagging?—small flowers and few, weak plants? Probably been in too long; need new soil and more room. Change 'em early to get good bloom this season.

In the Greenhouse

MOST important work for this month is starting seeds for vegetable and flower gardens. First vegetables go in early this month. This is earlier than they are usually planted; but give them plenty of room and grow them cool and slow.

To get the very best plants (vegetable or flowers), grow them in individual paper pots or dirt bands. The latter are merely strips

of paper, placed in a flat to hold them in place, which confine the roots of each plant so that when taken out they are not injured in the least:

☐ Start cuttings for spring bedding plants. New growth of wood (as result of getting stock plants into active growth—see last month's Reminder) should furnish good supply now. Get fresh clean sand; medium coarse, such as used for concrete work by builders.

Clean out cutting bed, and spray with good fungicide; whitewash; be sure that bottom and supports are strong as moist sand is very heavy; put in fresh drainage material to avoid possibility of disease; press down, water thoroughly; and ready for cuttings. Use only wood in good condition; too old or too soft will not give sure results; should "snap" when bent between fingers if in proper condition.

☐ Overhaul stored roots of Cannas, Dahlias, etc., *at once*. Discard any injured. Get moss and deep flats in which to "start" them toward end of month; cover roots with moss, keep moderately moist, and warm (under bench, near heating pipes). As soon as eyes or buds have begun growth, they can be potted up.

☐ Sow now for bloom inside Stocks, Mignonette, and other quick flowering annuals that may be wanted.

☐ Take heed now for Easter. Plants to be "forced" want starting now. Azalea, Lilacs, Roses, for "baskets" and trellises; Acacias, Deutzias, etc., are adapted for this purpose. Start in moderate heat—45 to 50 degrees night; increase gradually to 60 degrees; hold about there unless season is backward and they have to be rushed the last few days to come in for Easter (*i.e.* March 31st).

General Orders

RESTART old bulbs. Callas, Amaryllis, Gloxinias, Tuberous Begonias, etc., held over for rest period, are ready for starting now. Knock out of old pots; shake off soil; put in fresh soil or compost—plenty of sand and old manure—water sparingly and keep moderately cool till growth starts; then bring along rapidly.

☐ *Repotting time.* Now is the time to go over all benches in the houses. Discard old plants that are just wasting room. Repot and retub large plants; make general clean up, and "reorganizing"; get all empty bench space possible for new plants and potted cuttings that will be coming along next month. Provide space where possible under benches on sunny side of house for potted bulbs, cuttings in thumb pots, and other things which will not require head room for a few weeks. Clean house in general for the big spring rush!

☐ Fumigate and spray now! Just before the new stock comes on, make a special drive against all insects and diseases.

☐ Vegetables for growth indoors—repot to maintain active growth, and set out in permanent positions, as soon as ready, cukes or tomatoes, or melons started last month for growth inside. If to be grown in solid beds, bottom heat may be given.

☐ Make sowing of beets, lettuce, cauliflower, beans, etc., for crop in greenhouse

and frames. Cauliflower may be carried along in pots inside until half grown, then set in frames.

☐ Start vegetable roots. Asparagus, rhubarb, Witloof, seekale, etc., available. They force readily now.

Time now to buy new stock. Get plants while they are small at a quarter or so what they would cost you in May. Grow them on yourself. Do you know the newer Geraniums, for instance?

In the Frames

TIME now to get out the hotbed! It will take ten days to two weeks from time you get manure until seeds can be planted.

☐ Not too late yet to get a "miniature" greenhouse, or grown-up frame with lamp heating apparatus, to start this year's plants and have extra early vegetables.

☐ Once again—are your old sash all fixed up tight? Last time we're going to warn you about this!

☐ Get coldframes ready soon as possible. Even if you have greenhouse or heated frames to start seeds in. Get sash on cold frames, and keep snow off at all times, to get ground thawed and warmed up ready for plants or planting. Lettuce, beets, etc., can go in as soon as ground is ready to dig. Beans can go in the hotbed now, but not in cold-frame until the ground is really warmed up. Use a frame variety.

Small Fruits

LOOK over the mulch on strawberries and see that it is "down" properly.

☐ If you haven't yet been over cane fruit prune out now, down to the ground, all the old canes that fruited last year. Leave only the strongest of the *new* canes.

The Lawn

NOT much work now; but an ounce of *prevention*—see to it that no coal carts or heavy autos get on to your lawn, or back up on to the edges of it in turning round. Remember, too, that there will be work to do on the lawn later.

☐ Order now the things you will need—seed, humus, bone meal, sod-perforator, mower, and roller if your lawn is a large one.

The Orchard

DON'T put off pruning and dormant spraying that should be done now.

☐ Get a stock of "whips" or "buds," of some of the new varieties of apples to add to your orchard. (You may not have room for more trees, but you have for a few additional limbs.) Keep them on sand in the cellar, or in sawdust in the icehouse—cool and moist enough to prevent shriveling.

Plants in the House

SPRAY regularly to keep plants perfectly clean.

☐ Cut back and feed up old plants now, to get material for cuttings next month.

☐ Start Oxalis, Gladiolus, Amaryllis and other bulbs for late spring bloom.

Don't use any sweet oil, coffee grounds, or other decoctions on your potted plants. Prune back; repot if necessary; add a little bone meal; and water carefully. No other tonic needed.



Use the **DRAW HOE**, held half-side-ways to make drills and to stir soil around plants



The **WHEEL COMBINATION** tool has manifold advantages and is the greatest labor saving invention ever given to the gardener. It is pushed ahead by a series of short strokes. Plant your garden on a space unit so one adjustment will suit generally. Equipment includes hoes, rakes, plows, and sometimes a seeder



The **SCUFFLE** or **DUTCH HOE** is the hoe for cutting down weeds. You push it along



For cleaning up weeds, etc., take an **IRON RAKE**. The **WOODEN RAKE** is the better smoothing tool

The Garden Movies No. 2

PICTURING THE "MUST HAVE" TOOLS FOR THE GARDENER WHO MEANS BUSINESS. YOU CAN ALSO SEE HOW TO HANDLE THEM EFFECTIVELY (AND THAT'S QUITE IMPORTANT) BY STUDYING THESE PICTURES



There are trowels and **TROWELS**. For transplanting the long, slim, angular article will work without disturbance to neighbor plants. This is important



Do you really know how to dig? Most beginners place the right hand too high and fail to thrust the blade deeply and worse still scoop the surface instead of plunging almost perpendicularly. Use the **SPADE** (not shovel) for turning new ground



You cannot make a straight drill without a **GARDEN LINE**. Most beginners don't realize its importance



For ground in workable condition the **SPADING FORK** is a far better tool than a spade, breaking up the soil masses, and permitting work on wetland in spring that would cake under the solid, flat mass of the spade. Keep nearly upright

(Photos by
W. C. McCollom and A. Kruhm)

Simple Talk for the Beginner

THE TOOLS YOU REALLY NEED AND HOW TO USE THEM—CHAT ON PLANT FOOD

THE novice who intends having a "war garden" as a patriotic duty, will be well advised to confine his efforts to as few kinds of vegetables as possible. The common mistake with the beginner is too much variety which means greater effort. In the normal home garden we must have variety, but war garden efforts should be reduced to a severely practical basis. A garden begun with moderate ideals and carried to a successful conclusion is a better contribution to the "win the war" movement than one of greater ambition that does not "land." Now is the time for the big offensive to begin: get the manure hauled into the garden—it improves with age, and will pay just as good a dividend as your Liberty Bonds—get brush ready for peas. For remember the dwarf varieties are *not* just as good as the tall ones, on a basis of production. Bean poles should be made ready, the ends sharpened and tarred or partially burned to help preserve them. Fertilizers should be ordered and got under cover as quickly as possible. Deliveries are slow this spring and don't blame your dealer later on if you don't get your supply on time.

The beginner will be well advised to order fruit trees, cane fruits, strawberry plants, asparagus and rhubarb roots now while there is some leisure, because it is much easier to determine varieties and quantities now than it will be at planting time in April.

The Tools You Will Use

WHILE good tools do not of necessity make good gardens, they are a material help. It is really the muscle behind the tools that gives results. Those actually needed in the home garden can almost be listed on the fingers of one hand—spade, or digging fork, hoe, trowel, and sprinkling can—are necessities. There are, however, many other tools and accessories that are very helpful—manure fork, wheelbarrow, garden line, hand cultivator, spray pump, garden hose, pruning shears, raffia for tying, plant labels for marking seed rows, a measuring stick, asparagus knife, powder bellows, scuffle hoe, warren hoe, wheel cultivator, a pair of cotton gloves, and a little book in which to keep memoranda.

The measuring stick you will have to make. Take a piece of 1 x 1 soft pine 8 ft. long; mark it off in one foot spaces on all four sides; on one side divide the feet to give a 6 inch spacing and another into 3 inch marks. This will be one of the most useful garden implements. Its constant use when laying out drills makes for general tidiness and neatness.

How to Use Tools

SOME people manage to make hard work of any simple task, through not knowing how to use tools properly. In gardening a *spade* is used on new soil where sod or other roots must be cut in the digging; also for making trenches. In old gardens a *digging fork* may be used, and is preferable wherever possible as it breaks the soil particles better than a spade. For all smoothing operations, covering seed, etc., use the *wooden rake*; an iron rake is to follow up weeding operations for collecting the rubbish and also for raking stony ground.

Now as to *hoes*—they are not all alike:

For making drills and stirring the soil around individual plants and hilling up, the *draw hoe* is most useful; but don't use the draw hoe to cut down weeds or you will cover them as you work and are always walking on the finished work, a *scuffle hoe* is the proper tool to use for weeding operation—and by the way use it in the morning so the weeds may be raked up in the afternoon. The *manure fork* while useful enough is really a luxury for small gardens. It is used in handling manure, hay, mulch, piling up refuse in fall, etc. Few appreciate the importance of using the *garden line*. For my own part I would rather have a good garden line than a good hoe. You can make good drills without a hoe but I defy any one to do it without a line. In use keep the line taut. Straight rows are much more easily cultivated than crooked ones.

Small hand tools, such as dibble, hand weeder, clean cultivator, trowel, etc., though frequently of great assistance, are (with the possible exception of the trowel) by no means necessities. The spray pump or powder bellows might also be included among the luxuries as the powder can be applied by punching holes in the bottom of a tin can, and the liquids can be applied by using a whisk broom but the comfort and use of the particular appliance is so great and so obvious that the real gardener will surely acquire them. Raffia for tying, of course! No garden should be without it; also seed labels.

The *wheel cultivator* and *seeding implements* are up to the minute appliances and if your garden is of any size beyond the normal city yard the wheel cultivator will pay for itself in a very short time. For cutting pea brush, cutting down dead vines and stalks in fall, add a machete; in fact I don't have a tool that I make better use of. Another little but necessary garden accessory is a pair of cotton gloves which can be purchased for a few cents and are very useful at all times.

Taking Care of Tools

COMMON sense tells any one how to take care of garden tools, but it doesn't make him do it. The worst trouble is nothing but carelessness—laziness if you like. Leaving the tools exposed in the garden at all times causes the wooden handles to check and split and the metal parts to rust, and is obviously bad. *All tools should be kept under cover*, they will not only last considerably longer but will do much better work with less effort. The soil will adhere to rusted metal. A simple method of keeping the tools clean is to keep a tub of water handy for dipping the tools after use. They won't rust if hard water is used. Of course if the tools are not to be used for any considerable length of time, they should be coated with a cheap oil or grease.

Why Does the Farmer Plow?

THERE are several reasons why soil is "prepared." The layer beneath the surface oftentimes contains an excess of organic matters which are more or less deleterious to plant growth. It is desirable to bring these to the action of the sun and air; air is just as important to the roots of plants as water is and it is only by working over that the soil can gather the necessary air, plowing breaks the soil particles thus improving the texture, making it retentive of moisture and allowing

the air to penetrate more deeply. Every time a soil is worked it is improved. Digging has the same effect as plowing and is better for home gardens. This constant working, is what makes old gardens more productive, than new ones. And don't be afraid to bring some yellow loam to the surface. Always reverse the positions of the soil layers. Fall trenching that was done in old time gardens is merely bringing the bottom soil to the surface.

Use Manure Freely

UNQUESTIONABLY manuring is the best means of restoring to the soil the elements that plants take from it. Anything contained in the soil of benefit to plant life must be soluble, the more soluble the more readily available—plants don't eat anything.

Generally speaking manure is any productive matter that can be added to the soil to increase fertility.

BARNYARD MANURES are the excrement of animals usually mixed with rye straw, shavings or other bedding materials. Horse or stable manure is more generally used than any other form. Each year you can dig stable manure into the soil and you will find that in a short time it is entirely disintegrated and absorbed into the soil. Stable manure catches and stores moisture in large quantities, soil containing manure or which has been manured for several seasons does not bake, which is a very valuable point as plants will not grow in an arid, sun-baked soil.

COW MANURE has the same effect as stable manure and is preferred for plants that make a soft quick growth. It is difficult to get and is therefore little used excepting on estates where they have their own cattle. Cow manure is recommended for light soils as it is more retentive of moisture than ordinary stable manure.

PIG MANURE is usually classed as a bulk manure the same as stable manure, and usually is mixed with such manures. The customary procedure is to throw the fresh stable manure with the soiled bedding into the pig pen, where the animals by continual rooting and tramping convert it into first class manure. Any of these bulk manures may be applied to the ground in liberal quantities say from 2 to 4 loads for a garden 50 x 50 ft. according to the condition of the soil.

SHEEP MANURE as it is handled nowadays is really a concentrated manure; in appearance so much saw dust but extremely fertile. It is high priced and is usually employed as a special "tonic" for plants that are not doing well or for special crops where an extra degree of perfection is desired. It is not recommended for dry soils as it does not hold moisture to any extent; but on the other hand is invaluable to wet soils as it gives open passage to excess of moisture.

Many suburbanites who also keep chickens rarely make use of the hen droppings, because it has a bad reputation for no other reason than that it contains an enormous amount of readily available plant food and when used carelessly will burn. To prevent this put it in barrels with almost an equal quantity of sifted ashes. Apply this thinly and dig under. It is a wonderful fertilizer for onions, and is excellent for corn, leek, and other surface rooting plants. Use at the rate of a barrel to every 500 sq. ft.

Early Plants for the Paying Garden F. F. ROCKWELL

STARTING SEEDS EARLY FOR BEST RESULTS—MAKING THE BEST OF CONDITIONS

EARLINESS is particularly desirable this year. Success with the first plantings of many vegetables and flowers depends upon getting them so well along toward full development *before* hot, dry weather and the annual visitations of insect pests and diseases recur that they will escape injury from these sources of failure.

Of course experience counts, but on the whole starting plants is much less complicated and easier than planting and caring for a garden.

A sunny window in a room that is fairly warm (40 degrees or so on cold nights), and room to make an improvised frame in a sheltered spot outdoors later in the spring, may be put down as the minimum requirements in the way of equipment. The number of plants required for the average home garden is not great. Fifty cabbage, 50 cauliflower, 100 lettuce, 200 beets, 50 tomatoes, 25 peppers, 25 eggs, and 100 early celery, would be a pretty generous allowance for the general run of garden plots. All of these plants could easily be started in two or three flats, in the house; and grown and hardened off later in a space equivalent to about two standard coldframe sash, or six by six feet.

In general, there are four ways of starting plants: (1) In the house; (2) In a hotbed; (3) In a greenhouse; (4) In a coldframe.

Not practical to attempt to start plants in the house? True, many people try it each year, and fail. I still remember my own first attempt at starting plants. I had seen how the work was done in the neighboring greenhouse where, up to that time, I had bought all my plants. I thawed out some good garden soil, filled two small boxes, sowed my seeds, set them in a warm place in the sun, and watered assiduously. Result—after three weeks of anxious waiting and watering—three little plants forced their way

up, looked around, and crawled back in again! Investigation showed soil soggy at the bottom, dry on top, and with a "crust" that came up in flakes two inches square and a quarter of an inch thick! And there ended my first little journey into the realm of plant growing.

The fact is that the air in the ordinary dwelling house room is so dry that it has a tendency, especially in connection with bright sunlight, to "bake" any soil. But it can be overcome. The first precaution is to take exceptional care in the preparation of

in the soil, or in flats. The former method has the advantage of being less work, and of saving some space; but the latter is generally more satisfactory, as each lot of plants may be handled separately. And as soon as the plants are large enough they can be removed to a cool frame to finish growth, leaving the hotbed available for the starting of other things. (The construction of hotbeds and coldframes, and the various ways of heating the former—by manure, warm-air from the cellar, hot-water, pipes, etc., have been discussed in detail in earlier numbers of THE GARDEN MAGAZINE.)

When the hotbed is heated with manure, sowing must not be done before the manure has reached its maximum heat. After the bed is prepared, leave it closed for a few days, until the thermometer—which should always be hung inside a frame—has reached the highest point, and gone back to around eighty degrees.

Starting plants in a greenhouse is of course working under the best of conditions.

One is independent of the weather, has a comfortable place to work and all conditions pretty much under control. Abundant light, while absolutely necessary for the smallest growing plants, is not required until after they are actually up. Germination can be hastened materially by placing the flats on the heating pipes, under the benches; or by preparing a section of a bench directly over the pipes with only a couple of inches of soil in it, and closing in the pipes below with old bagging. In a cool greenhouse, a little frame may be constructed over a section of a bench, with a space at the back for the heat from the pipes to enter it. The temperature in this may be kept five to ten degrees higher than in the house.

Before being ready to set out in the garden, all plants must be put through a final process of "hardening off."



Coarse drainage material in the flat bottom prevents the soil from getting soggy



Watering the transplants by light spraying firms the soil and starts them growing again

soil and drainage. The second is to prevent evaporation from the seed box. The third is to avoid watering the surface of the seed box. And the fourth is to increase, as far as possible, the moisture in the air.

Evaporation from the soil in the seed box may be reduced to a minimum by covering it with a pane of glass. Putting a glass cover on your seed flats has the same effect—condensation of the escaping moisture on the glass keeps the air above the soil saturated with moisture. If no glass is available a double sheet of newspaper, laid over the box and kept moist, will answer; but as this must be removed immediately the seeds begin to sprout, it is much better to get the glass. The latter should not fit quite tight.

Watering the surface of the seed flat may be avoided either by submersing the bottom of the flat in a half inch or so of water, so that it will be soaked up from below, until the moisture appears on the surface; or by using an old funnel which is inserted to the bottom of the flat, at three or four different points, so that the water is applied to the bottom of the soil, instead of on the surface.

Air moisture. The kitchen is the one room in the house where the air remains near normal. It usually gets more fresh air from the outside than any other room, and the constant evaporation of steam and water replace the moisture removed by artificial heating. A sunny kitchen window is the best place in the house to start plants.

Starting plants in a hotbed while simpler is perhaps less comfortable than starting them indoors. As the days get longer the ventilation has to be watched closely. The use of double-glazed sash instead of the ordinary single ones will be found advantageous making it possible to get the benefit of the sun heat even in very cold weather.

Sow seeds in the hotbed either directly



The soil is firmed by pressure and seed sown in shallow drills. One flat will supply a small garden



Just as soon as the seedlings are big enough to catch hold of it is time to transplant into a new flat

THE PATRIOTIC GARDEN

FOOD F-O-B THE KITCHEN DOOR

He also Fights who

Helps a Fighter Fight

EAT • FRUIT • AND • SAVE • SUGAR

EAT • NUTS • AND • SAVE • FAT

Planning to Set Out Fruit Trees M. G. KAINS

WHO does not love the orchard at Grandpa's—that "murmurous home of innumerable wings" in blooming May; that spicy, browsing place "looking lazy with neglected plenty"—when lavish autumn spreads his gold and garnet store! How many happy memories play hide and seek among the sunflecked shadows of the grand old trees! Oh, to have just such an orchard now! *Why not?*

"There isn't room," you say? Perhaps not for an orchard of as many trees and scattered about in the same way as at Grandpa's, but—*Is that the only way?* I think not. A smaller family plantation than that recommended by Thomas, author of "The American Fruit Culturist," will surely satisfy one's longing—he would have a plantation including 100 currant, 200 raspberry, 100 blackberry, 25 gooseberry bushes, 40 or 50 grape vines, 5 or 6 apricot, 10 to 20 plum, 40 or 50 peach, 20 to 30 pear, as many summer and fall apples and 25 to 50 winter apple trees. A *farm*, not a garden!

How Large a Home Orchard?

WHY, there's potentially enough fruit there to inundate a growing village! Just look! A moderate yield of mature currant and gooseberry bushes is five quarts to the bush; of blackberries two to four quarts; of raspberries one to three; of peach, plum, and apricot trees five to ten bushels; of pears 20 to 30 bushels; of apples 25 to 40 bushels. Even supposing that Mr. Thomas's family could use the 500 quarts of currants, the 200 to 500 bushels of peaches and plums, the 400 to 900 bushels of pears and the 600 to 2,000 bushels of apples that his plantation should bear, do you think *your family needs* that much?

The best way to determine how many plants may be needed is to consider the appetites of the family and to use the average yield figures just given, remembering that sometimes a tree or a bush may produce little or nothing and sometimes maximum yields. The highest yield of currants that I know of is 10 quarts to the bush; that of apples 27 barrels—more than 80 bushels—to the tree! Such yields, however, are exceptional.

Home vs. Commercial Ideals

IN ORDER to avoid being struck aghast by even the average quantities just mentioned remember that all the fruit does not ripen at once. Varieties known to the commercial fruit grower as "croppers," those that yield allopathic doses, or nothing, are far less desirable for the family orchard than are those which yield on the homeopathic and

continuous performance principles during a period of several weeks or even months. Indeed, it may be stated as a bald axiom that the commercial and the family orchard

interests and standards are diametrically opposed.

When a commercial grower chooses a variety he usually determines beforehand



Isn't a fruit tree just as decorative as you can wish? Not alone in flower, but equally when in golden fruit. Apples, pears, plums, cherries, and peaches may be used

how it tallies with his standard of productiveness, hardiness, resistance to physiological, fungous and insect troubles, its cold storage adaptation, its color, size and quality, usually in about that order—quality last of all you note; whereas for home use the judgments may be restated (in order of weight) about as follows: quality, duration of ripening, hardiness, resistance to troubles, productiveness, then (in a very minor way) color and size. Cold storage adaptation is usually not considered at all. In short, get the idea clearly fixed in mind that the amateur or family standard of judging a fruit variety is far more exacting than the commercial one.

Apart from the negative attribute of poor quality which characterizes a large number of the commercial varieties, of which Ben Davis apple, Kieffer pear, Alberta peach, and Lombard plum are horrible examples, there is another good reason why such varieties should be shunned when planning a home orchard. They are obtainable in the market, therefore the choice should fall upon "something different."

What Fruits to Choose First

TO START the list of fruit not obtainable in the market, at least not of good quality, there's the cherry. Of all our tree fruits this is the one that loses its flavor soonest after being gathered—a good and sufficient reason in itself for growing the cherry at home.

Taking the country east of the Mississippi River, the leading sweet varieties are Windsor, Napoleon, Black Tartarian and Wood. The sweet cherry seldom succeeds in the Great Plains states. On the Pacific Coast, Napoleon, Bing, Lambert and Republican are the most prominent sweet kinds. In that section sour varieties may be chosen but are little grown. Of the sour kinds the leaders are doubtless Early Richmond, Montmorency and English Morello. Intermediate between these two classes are the Duke varieties which are almost unknown on the market and are therefore special candidates for the home plantation. May Duke, Late Duke, and Reine Hortense are among the best.

Among plums Abundance, Burbank and Satsuma are most widely adaptable of the Japanese kinds. They are mostly useful for culinary purposes early in the season. Other culinary varieties of special merit are Italian Prune, Shropshire Damsen, Grand Duke, Monarch and German Prune. Dessert and general purpose varieties are Middleburg, Hand, Peters, Archduke, Washington, Jefferson, Pearl, Golden Drop, Imperial Gage and Reine Claude (or Green Gage).

Beware of planting too many early pears. One tree of a kind will usually be enough in



Peach and cherry make striking objects in the spring garden when in bloom. They fruit early, too

even the large family orchard because nearly all summer varieties are subject to decay at the core if left on the tree too long. However, they start the season six weeks or even two months earlier than the Bartlett, so the best of them should be included if there is space to spare for Madeline, Manning's Elizabeth, Tyson, Clapp, Giffard, and Rostiezer.

Unless I had plenty of space I would not include the Bartlett, simply because there is always plenty on the market. To follow Bartlett till midwinter or later I would choose among Louise Bonne, Onondaga and Seckel which begin to ripen in September; Comice, Hardy, Sheldon, Superfine, White Doyenne, Angouleme, Anjou, Bosc, Howell, Vermont Beauty, Worden, Winter Nellis and Lawrence, which start in November; Dana's Hovey and Barry in December, and Buerre Easter in January. The earliest of these fall varieties have a ripening period of three to six weeks; the latest may be kept in good home storage until late winter or early spring. So the full list should cover the season from late July until February or March, between seven and eight months.

Like the earliest pears the earliest peaches are inferior—large stones in little bags of rags and poorly flavored water, mere apologies for varieties which start to ripen two or three weeks later. So unless there's ample space they may as well be omitted and the area be devoted to late cherries or early plums.

The earliest fair flavored peaches are Alexander, Carman and Yellow St. John; better, second early ones, Belle of Georgia, Champion, Mountain Rose, Rivers, Tillotson, Rochester, Lamont and Early York; the midseason, as good or better, Foster, George Fourth, Susquehanna, Lemon Cling, Willett, Oldmixon Free, Reeves, Stump and Early Crawford; late ones are Fox, Late Crawford, Salway, Lemon Free, Smock, Stevens and Ward; latest of all, not successful where the seasons are short, are McKay, Heath Cling and Bilyeu. This list will provide peaches from July to November, or with special care even until Christmas! But among them all how is one to choose for a small place? Start with Foster, Early Crawford, Late Crawford and Oldmixon and add such others as may be desired.

Among apricots only a few are of outstanding excellence. Moorpark, Royal, Peach and Early Golden are doubtless the most widely successful and worth while. In growing them be sure that they are placed in the coolest part of the property—the north side of a building, a wall, or a screen of tall evergreens, a northern or a western slope—anywhere that the sun reaches late. This will retard the premature opening of the blossoms in spring.

What a Wealth of Apples!

WHERE shall one draw the line among the apples? I would make *my* first choice among the early kinds because the market supply is small and poor. Being mostly soft and therefore inferior shippers they suffer in transit. Also they lose flavor far more rapidly than do later kinds, of which there is always a goodly supply. I would prefer dessert varieties to culinary kinds for



Do you not love the orchard at Grandpa's that was so rich in promise each spring and gave such luscious fruits each summer? Beauty and utility combined

the same reasons. Another point in their favor is that most of them have a long period of ripening, so fewer trees would be needed to give a supply. For instance, as a boy I usually began to eat the prematurely ripe fruit of Primate in late July and sometimes gathered specimens from the same trees as late as mid October. This last, however, was exceptional, because of the high quality of the variety and the family appetite for it. Still another point in favor of summer varieties for the home: Early maturing kinds are far more likely than late ones to bear each year. This is because they have a longer season following harvest in which to develop their blossom buds for the next year's crop.

The following dessert varieties will cover the season from late July to late October: Red June, Early Strawberry, Early Joe, Primate, Benoni, Williams, Sweet Bough, Sops-of-Wine, Chenango, Late Strawberry, Jersey Sweet, Hawley, Fanny, St. Lawrence, Ribston, Porter, Fall Pippin, and Cox Orange. To be sure some of these may be continued in perfection well into November or even December, but it is well to follow them with later kinds where there is space to spare. The following late kinds which start to ripen in October and continue in succession until May or June will cover the entire season from late July of one year till late May of the next: Fameuse, Blenheim, Shawassee, Wealthy, Louise, McIntosh, Mother, Black Gillyflower, Hubbardston, Ortle, Peck, Tompkins King, Wagener, Canada Baldwin, Esopus (Spitzenburg), Grimes, Jonathan, Lady Sweet, Opalescent, Red Canada, Sutton, Sweet Winesap, Westfield, Winter Banana, Northern Spy, Ponnie Grise, Swaar, Golden Russet, Green Newtown and Yellow Newtown.

For cooking, Astrachan, Early Harvest, and Yellow Transparent are among the best for July and August; Duchess of Oldenberg, Maiden Blush and Gravenstein for September; Smokehouse, Fall Pippin, Twenty Ounce and Wealthy for October and November; Belleflower, Tompkins King, Northern Spy and Rhode Island (Greening) from December to January, and Baldwin, Stark, Winesap and Newtown from midwinter till late spring. Of course, these overlap more or less.

My idea in mentioning so many varieties is to provide the reader with lists of really meritorious kinds so he will know which ones to choose when looking over the nurseryman's catalogues. Not all are carried by every nurseryman so it is well to have several catalogues when making up orchards.

Making the Most of the Area

BEFORE planting time comes it is well to decide just what there is space for and just where each tree and bush is to be planted. If space is not at a premium each kind of fruit may be kept in an area of its own aloof from other kinds. There are advantages in this; probably, however, nine planters out of ten must adopt a practice which commercial

"He who owns a rood of proper land in this country, and, in the face of all the pomonal riches of the day, raises only crabs and choke-pears, deserves to lose the respect of all sensible men. The classical antiquarian must pardon me for doubting if, amid all the wonderful beauty of the golden age, there was anything to equal our delicious modern fruits—our honeyed Seckels, and Beurre's, our melting Rarities. At any rate, the science of modern horticulture has restored almost everything that can be desired to give a richness to our fruit gardens. Yet there are many in utter ignorance of most of these fruits, who seem to live under some ban of expulsion from all the fair and goodly productions of the garden." *Downing*. (Preface to "Fruits and Fruit Trees of America")

growers avoid, but which we all remember was "highly successful at Grandpa's"; namely, interplanting.

The largest growing trees, like standard apples and sweet cherries were set at maximum distances apart. Half way between them in the rows smaller and shorter lived trees were placed, and currant and gooseberry bushes also in the same rows. Between these rows wide spaces were left for strawberries, vegetables and perhaps flowers. The grape vines



If your home plot is small why not use trained dwarf fruit trees as hedges to these sections?

and the raspberry and blackberry bushes were relegated to trellises and to fence rows usually at the sides of the area.

The tree rows were made to extend the long way of the plot so a horse could be used to do as much as possible of the necessary cultivation without unnecessary loss of time due to turning, as would be the case if the rows ran the short way. By good care, especially as to fertilizing and tilling, such interplanted areas were kept in better bearing and during a longer time than commercial growers are usually willing to admit.

What of the Suburban Lot?

BUT HOW about the little suburban lot? Must it forego fruits and confine itself to vegetables and flowers, and only a few of them? By no means. One successful instance will be better than a wheelbarrow load of theory. A friend who lives in a suburb of a large city has a lot which, if my memory serves me correctly, is 200 by 75 feet. Of this area more than half is occupied by the house, the lawn and the ornamental plantings. Yet what a list of fruit is grown! Ten varieties of grapes (one vine of each on a thirty foot arbor); three peach trees; a 22 x 23 ft. dwarf orchard which includes a dozen pear, nine apple, four cherry and two plum trees. About 15 Concord grape vines cover the 150 feet of side line fence, and about 75 feet of raspberry row stands beside the rear fence. There are three currant and three gooseberry bushes, a strawberry patch and an asparagus bed each about 10 x 50 ft., half a dozen rhubarb plants and a vegetable garden which yields the year's supply of everything except potatoes for the family of three, to say nothing of an abundance given to numerous city friends who are frequent visitors.

Interplanting and dwarf fruit trees are the salvation of the small suburban fruit plantation. If space is at a premium why not devote at least some of the ornamental shrub space to dwarf fruit trees? What more beautiful ornamental is there than a peach, a cherry, a plum or an apple tree in full blossom? Or what more beautiful than these same trees in the regal scarlet, purple or gold of fruitage?

The Chronicle of a 1917 War Garden

RAPHAEL SEMMES PAYNE

"I beseech you forget not to inform yourself as diligently as may be, in things that belong to gardening."—*Sir John Evelyn*.

THIS is a chronicle of a Maryland war garden in the suburbs of Baltimore within ear shot of an armory. This little "plantation" has paid for a hundred dollar Liberty Bond after supplying a small household with vegetables in great variety since early last spring. A few years ago golf players regarded with sympathy and amusement those among their acquaintances who persisted in spending their spare hours at amateur "farming" and horticulture; to-day they not only admit the philosophy of the garden, but are making elaborate plans for the spring of 1918.

There is nothing phenomenal about this garden. It is surrounded by many other typical home gardens at least just as successful. There is one in which a Frenchman's wife has worked with commendable industry against odds, and has achieved remarkable results, transforming into a productive plot

a vacant lot upon which sub-soil and rock taken from gas trenches had been dumped in heaps. She overcame these obstacles heroically, in heat and rain and has provided for five little girls, her husband being employed in the postal service, which calls for long hours. Another has been worked by a Catholic priest and his sexton, yielding ample products for two tables. A short distance beyond, over in the beautiful Green Spring Valley, famed as a fox hunting ground, last spring fashionable young women went out into the fields and dropped corn; some were seen setting out hundreds of tomato plants; while others helped to plant potatoes and drove home lawn mowers.

But what might make a story of this particular garden instructive and useful—especially to novices and those who may enter the field for the first time in 1918, are the following facts: First, it has proven a

training ground for good health and a happy order of life. Second, it illustrates what a man transacting business daily in a city ten miles from his home can derive from a small piece of ground. Third, it points out tried methods which may help beginners to avoid mistakes and get results from their first experience at manual industry, enabling them to cope with the advance in prices and to contribute a fundamental quota to the general sum of conservation.

WITH the first symptoms of springtime—around St. Patrick's Day—two 75 foot rows of Early Bird peas were planted two feet apart to admit of lettuce plants from the hotbed later on. Well rotted cow manure was worked in the soil and a few pounds of humus for its feeding power. The crop was a prolific marvel and a week ahead of those who had planted Alaska and other more precocious

varieties. That ancient "wise saw" naturally popped into the mind—"the early bird catches the worm!" They yielded about three bushels. My first real experiment at "the intensive" turned out to be the most fascinating and practical scheme in the whole garden.

A little strip of old sod and weeds at the head of the garden, with a southern exposure, in which two years before some dwarf fruit trees were set, had been ploughed in the fall of 1916. It looked pretty rough with stone and coarse grass roots, but in two hours it resembled a florist's seed bed liberally enriched with horse manure and a gallon or more of the magic humus about which I had been reading during the winter.

It was now well into April with its capricious days of sun and showers. Here were first set out, and along the fertile edges of the asparagus bed (ideal ground for early table relishes), one hundred plants of Big Boston and Market Gardener's lettuce (which sold in May and June at five cents a head after personal needs and gifts); then three rows of onion seed (yellow Prizetaker, White Pearl, and Large Red Wethersfield) 18 inches apart to admit of constant weeding and cultivation with the little hand wheel-plough. Although sown thickly, there was no thinning out. When gathered the first week in August the yield was one bushel from 225 feet, a peck of which are as large as winter onions, while nearly half a bushel had already been disposed of as "Spring onions." This remaining bushel is worth as sets fully \$5.00 if last season's prices can be taken as an index. In this same plot were radishes, peppers and egg-plant, all of which contributed their "bit" to the Liberty Bond. After the onions were harvested, the plot was spaded—the humus was still there—and put in late radishes, two rows of kale for winter and spring consumption, and a bed of lettuce seed for plants for a winter crop in the hotbed.

Apropos of "dug outs," this hotbed was built of concrete, with the double sunlight sash as a covering. It measures 6 x 19, has two partition walls with a uniform thickness of three inches. It cost less than \$15.00. It has these advantages: Cheaper than lumber, proof against frost and vermin, holds heat and moisture longer than wood and lasts a lifetime. This little "greenhouse in the ground" is an important factor and keeps my household in crisp lettuce, spring onions and parsley from



Beans along the walk edged it neatly and gave a good winter supply of dried beans

Thanksgiving to late in May. Moreover, it produces sundry plants for the garden along with 500 Pansy plants which are raised from seed sown August 5th to 10th. Experience with the Pansy shows that they will maintain their bloom all summer and in greater beauty, if the flowers are pinched off just as they begin to wither. Like Sweet Peas and Nasturtiums they seem to rejoice in being plucked.

AS A bushel and more of seed potatoes were saved from my crop of 1916 by sprouting the winter supply three times, the outlay on the garden's main crop was very small. They were Irish Cobblers and the tubers were cut with two eyes, dropped 10 inches apart with the eyes down, allowing about 2½ feet between the rows. There were 14 rows of 72 feet each and they averaged one bushel to the row. About 75 pounds of humus, which cost about one dollar was all the fertilizer used. My experience with several varieties favors the Cobbler for a home garden—in quality, size and keeping powers they hold their own, although they do not yield so abundantly as others. Generally satisfactory results have also been had in this garden with Green Mountain, and Burbank. There were practically no potato bugs. The best artillery to combat insects are (1) mixture of paris green and lime in either powdered or liquid form (2) Pyrox and (3) Hellebore. For egg plant, cucumbers, cabbage, and cauliflower which are seldom immune, number 2 has been found a simple and effective remedy especially for egg plant which is very susceptible to the ravages of little enemies.

In the autumn of 1916 a miniature Sweet Pea garden was prepared after the most approved methods. In the spring it was converted into a cucumber patch of 25 hills, White Spine. It is an open spot on a slight incline facing north and fringed with fruit trees which shaded the vines and prolonged their life. They yielded generously from the latter part of July until the middle of September and sold at ten cents for three all summer.

A feature both as an interesting and profitable crop was the winter onion patch—500 feet in yellows, reds and silverskins, the sets having been raised by the writer from select seed. They were put out from time to time during April two inches apart allowing two feet between the rows for cultivation and weeding every ten days. The yield was 4½ bushels.

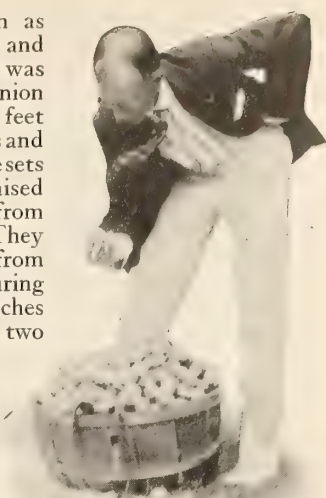
The profit on this item is practically clear. Few crops are more interesting if assiduous attention is given it, than the onion. When growing, it is almost as attractive to the eye as a florist's Carnation growth in mid-summer, when he is calculating on the beauty and value of each bloom. In the same way the prosaic gardener is building castles on the size and perfection of the bulb which is so essential to the cook at all seasons.

As the tomato crop is always given importance in Maryland, much interest was shown during 1917 in its culture by amateurs in and around Baltimore. In spite of the vicissitudes of the season, which at times wrought havoc, my crop of 125 plants yielded admirably and proved profitable.

The sugar corn crop—Stowell's Evergreen, Country Gentleman, and Golden Bantam—about 900 feet in all, was planted two weeks apart in the order named. This proved quite a little "money maker," selling on an average at 25 cents a dozen. It only cost two loads of manure, but "some" work. It pays,

though, if you will keep down the suckers, cultivate often and "right" the stalk after each storm.

OLD gardeners tell me that the great mistake beginners make is that they start the season with enthusiasm, but too often let the vegetables take care of themselves at the critical period of their growth. Work to spell "industry" must be maintained from the ides of March to the advent of Jack Frost. Cardinal rules comprise: stirring the soil whenever baked—no matter how often it may be necessary; fight the weeds until the vegetable is "made;" water when dry, even though the weather man says "Probably showers this afternoon or to-night."



This war garden onion crop used at home during winter contributed its bit to make Sam's conservation scheme



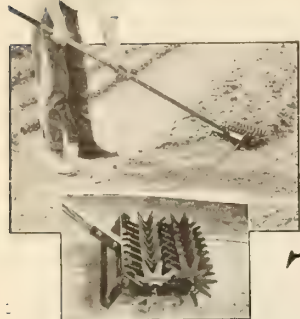
THE PIG'S PART IN THE GARDEN

This pig is a very important garden adjunct. It serves a double purpose in these days of intensive production, by converting into sound fat and food material that would otherwise go to waste; and incidentally it is the best possible machine for rooting among stable refuse and quickly making it available as high grade garden fertilizer

Gardening on a "Machine-to-Win-the-War" Basis

ADOLPH KRUHM

LOSS OF MAN POWER FOR THE GARDEN OFFSET BY MODERN TOOL EFFICIENCY



The toothed rollers of the Star pulverizer working over newly turned soil, makes a good seed bed

THREE years have demonstrated that this is a war

of man and his machines. Now, that the war has come home to us, it is well that we should seriously take stock of such machines as will help us win greater production from the soil with less labor. In the final analysis, it is not the machine of destruction, but of production that will count most. Before men can fight, they must be fed. Before they can be fed, we, of America, must grow the crops. A large part of the food needed by our allies and ourselves will be grown in, or saved by, our gardens this year. To make these gardens more productive with less help, we need to make use of better machines, implements, tools.

Man started to make gardens with the only implement the creator gave him—his hand. Five bent fingers opened the first furrow, dropped the seeds and covered them. When the fingers were replaced by wooden pegs, fastened to a crossbar, the *rake* was born. A sharpened stone, tied to a stick, to penetrate hard soil, represented the first *hoe*. A longer, larger stone, fastened to a stronger handle, to dig after root crops, was the ancestor of the modern *spade*. [Elsewhere in

this issue, the reader will find a description of the usefulness of all the elementary tools in garden making.—Ed.]

When man reached that stage of intelligence where the domestic animal was made to serve, a sharpened stick, tied to a log and pulled by other men, or by oxen, saw the birth of the plow. In China they still use wooden plows worked by a single man. The evolution into the modern American tractor which is now rebuilding the gardens and farms of France parallels the progress of human development. It is significant, however, that, after thousands of years of improvements, modern tools show few radical departures other than motive power or method of handling. In principle of design, nearly all garden tools



This tool is fairly representative of the now considerable family of wheelhoes with changeable attachments



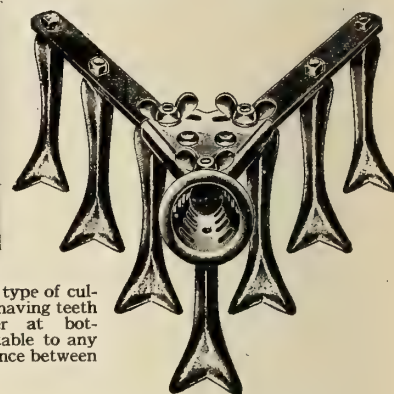
The "potatriot" will be interested in this special tool for hilling

Nearly all of them have quite a variety of adjustable attachments making them indeed many tools in one.

The Iron Age wheelhoe cultivators and the large Planet Jr. family of garden tools have become as household words with efficient gardeners. The all metal cultivator, adjustable in many ways is made for permanency. On the theory that the more



For light soils these disc attachments to the wheelhoe are obviously serviceable in mulching



A "different" type of cultivator weeder having teeth that are wider at bottom and adjustable to any angle and distance between rows

—hand or power—perpetuate the idea of the first application of the bent fingers

Very recent indeed is any effort to combine original principles. Why have a separate tool for digging a hole, uprooting a weed, for raking or hoeing or smoothing the soil, when one combination tool might do all three? Quite a number of combination tools are now available, all serving different purposes in good fashion.

God gave man his spine to walk upright and the bent back has ever been a cause of hardship, of labor in an unnatural position. Nearly a quarter century ago a pioneer American tool maker, Norcross, grafted the five-bent-finger-cultivator idea on to a long handle. The short teeth became long prongs and an efficient long-handled cultivator was created. By putting a joint into the otherwise stiff rake, it was transformed into the now well-known Pull Easy cultivator, changing the pegs of the rake into effectively bent and practically shaped cultivator teeth, gave birth to quite a variety of other cultivators, all steps in the right direction. But all are based on the principle of the human hand.

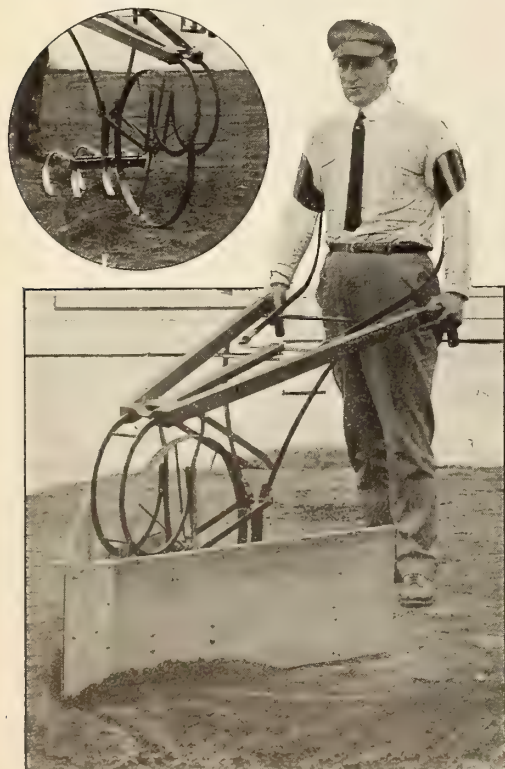
When necessity obliged man to do more cultivating in less time, he looked about for means whereby to cover the ground more rapidly. Cultivator teeth mounted on frames, attached to wheels, were logical steps in improving the garden tool. Pushing being more practical than pulling—push handles were attached. Thus, the modern wheelhoe came into being. Though quite a number of models are available, they differ in physical detail, rather than in principle of design.

weight is taken off the cultivator teeth, the more power becomes available to push the cultivator, the Lou Dillon Tandem cultivator has a wheel in front and one in back of the teeth. Because some crops, like onions, require strictest weeding in the row, as well as between the rows, special rotary weeders, like The Golden and The Tornado were invented.

As man learned more about the science of soil tillage, the need of thorough pulverizing to preserve moisture called into existence special discing and mulching implements. In an endeavor to make the modern garden tool useful the year around, The Colfax cultivator may now be equipped with special snow plows.



The gasolene engine is being brought into use in a garden tractor, to offset the diversion of man and horse power due to war



Here's a "spring lever" machine cultivator which has the "push" converted into a "pull" on the wheel. Has snow plow boards



The flowers of *Deutzia longifolia* vividly recall the old time Wax-plant. Color dull creamy white and rose



"Chinese Large-flowering Deutzia" (*D. Schneideriana laxiflora*) which blooms about the middle of May. Very floriferous

Two Chinese Deutzias of Merit

J. HORACE McFARLAND

Author of "My Growing Garden," "Getting Acquainted with the Trees," etc.

EVERYONE knows the Deutzias, of course! The "tootsies," as an old blacksmith friend used to call them, are in most door yards, along with Spireas and Lilacs. The three or four familiar members of the family are standard and excellent shrubs, and tend to be overplanted in consequence. The fine, compact and low-growing *D. gracilis*; the old and tall-growing "crenata flore-pleno" which we now class as a variety of *Deutzia scabra*; and the much-vaunted "Pride of Rochester" variety of the last species—all these are familiar.

Then there are the fine sorts made for us by that prince of shrub hybridizers, Monsieur Lemoine, of Nancy, two of whose plant-loving sons have been sacrificed to the European Moloch in defense of France. *D. Lemoinei compacta* is a delightful shrub, and the variations of it called "Boule de Neige"—really a ball of creamy snow!—and "Avalanche," which has the effect of its name, are the sort of shrubs which increase admiration for this wonderful Frenchman. A half-dozen other forms there are of his hybridizing, every one worth while, and as distinct as are the master's wonderful *Philadelphus* or *Mockoranges*.—[The reader will find in THE GARDEN MAGAZINE for May, 1917, a more detailed account of these hybrids with portraits of many.—ED.] Most nurserymen miss these hybrids in selecting their mother shrubs for propagating, I am sorry to say. They ought to be more widely known.

But it is of two Deutzias brought from West China by that plant benefactor, E. H.

Wilson, the Arnold Arboretum's ornamental plant scout, that I wish to write. Each is a clearly distinct species, and very different from the common types of Deutzias. Each is good in itself, and presents in addition fine opportunities to the hybridizer who might care to emulate the patient, painstaking and productive work of M. Lemoine.

Indeed, before telling of these Deutzias, I may well quote from Professor Sargent's Arnold Arboretum Bulletin No. 25 of June 5, 1912. Writing of the Lemoine hybrid Deutzias, he says: "The systematic crossing of shrubs with the object of creating new forms, except perhaps in the case of Roses, is a comparatively new industry, but it has already produced startling results in such genera as *Magnolia*, *Deutzia*, *Philadelphus*, *Ceanothus*, *Rhododendron*, and *Diervilla*; and with the great number of new shrubs discovered in recent years in Eastern Asia and Eastern North America at his disposal, the hybridizer will now have new and abundant opportunity to show his judgment and skill in producing new races of plants."

Thus the two Wilson Deutzias illustrated here may not only be of much value in themselves, but also as they contribute their qualities to the "new races" which we may hope to have some capable American hybridizer produce.

Deutzia longifolia is to reach six feet in height eventually, according to Mr. Rehder's account in Bailey's "Standard Cyclopædia of Horticulture." My own specimens, planted in 1913 while yet the pre-name Wilson number

of 4326 was its only designation, have had hard luck, for they were set in an "Arboretum bed" of new things, the growth-habit of none of which I knew. In consequence, the strong growers soon over-shadowed and robbed the less upstanding shrubs, and *D. longifolia* has been deprived of a fair chance at sun and soil. About three feet high in 1916, with upright branches and interesting foliage, it has bloomed freely in 1915, 1916, and 1917.

The flowers are strikingly distinct both in form and color. My garden note of June 4, 1916, describes its flowers as "like those of the old Wax-plant, *Hoya carnososa*," and I cannot now think of a better description. But as many readers of THE GARDEN MAGAZINE may not be familiar with the old greenhouse climber to which I have compared this Chinese visitor, let me say that the flowers open out rather widely, but preserving a vase form. The petals shade to dull rose-colored centre, and there is a certain waxiness about the flowers which justifies the reference.

"Many-flowered corymbs," reads the scientific description of this fine "posy," and the picture will prove it. More than three quarters of an inch across, the individual flowers are large, and the clusters or "corymb" effect distinct and attractive.

The Cyclopædia description says of *D. longifolia*: "One of the handsomest Deutzias, but has proved hardy only under protection at the Arnold Arboretum." So much for the cold east winds of Boston-town; but the conditions in the valley of the Susquehanna

are certainly more favorable, for the plants have proved entirely hardy here for the three winters of their life with me, one of the winters being so rough and tough as to bite chunks of green out of the husky Japanese Yew.

The picture tells the story, all but the color, and the color of light cream white and dull rose is "all right," to lapse into slang. I suggest its trial by other planters who care to realize how liberally God has showered flowers upon all the continents of this beautiful world.

THE name, *longifolia*, can be said without tongue-twisting; but how about the other *Deutzia* I have pictured, which owns the formidable cognomen of *Deutzia Schneideriana* var. *laxiflora*! Can even so good a shrub overcome the handicap of such Latin profanity? Friends who visit my garden constantly ask me plant names; and when I have answered their queries in front of this plant, I have noted the justified scorn with which they are likely to listen to such a lip scorcher. Mr. Schneider was, or is, doubtless a most excellent gentleman, and I am entirely neutral as to where he came from, or may have gone to; but why, in the name of plain English, must he or his memory be celebrated by tagging a decent plant with such a Teuton-Latin aggregation of the alphabet? Let us call it the Chinese Large-flowering *Deutzia* for awhile, anyway, until someone invents a "common" name that will be fair to this fine flower.

For a fine flower is this Chinese immigrant, certainly. It happened last year that one twig at the very bottom of the three-foot plant opened more than two weeks ahead of the proper flowering time for the species, and so permitted me to photograph it in exact comparison with *Deutzia Lemoinei* compacta. The blooms, very much like the Lemoinei favorite, were a full inch across, and practically twice the size.

The comparison was made May 25, when Lemoinei was at its maximum. The "Large-flowering Chinese" *Deutzia* is much later, and the other photograph, made May 12, shows

sume a more graceful attitude, but I shall like it anyway for its distinct and pleasant flowers.

No suggestion is made that "*Schneideriana laxiflora*" is not entirely hardy. My plants have been through the same three winters as *longifolia*, since the former came to me ahead of its awful name, as *Deutzia* 570 Wilson, and I believe it will be found to stand Middle States hardships. It is now a rampant grower, like, for instance *Spiraea Henryi*, which is a merit for most gardens. I am liberal to my shrubs, and most of them give me a full return; but I can with complacency see a plant maintain a moderate vigor,

because of certain of them which have been otherwise disposed, and have endeavored to cover too large a part of my precious two acres of Breeze Hill garden!

WHERE may these shrubs be obtained? I do not know, but I suspect one enterprising Boston nurseryman of having plants; and if those who look beyond the baker's dozen of shrubs which nurserymen seem most in love with will keep demanding other newer and better things, mayhap these backward tradesmen may even sometimes go to the shrub heaven of the Arnold Arboretum, there to see the garden riches which ought to add to the scanty variety they offer to aspiring planters. So go after them for these good *Deutzias*, my garden-improving friends; the demand will be good for their retiring natures!



By a lucky chance one branch of the new Chinese large-flowering *Deutzia* (left) bloomed early enough to be photographed alongside of *D. Lemoinei* compacta (right). The difference in size of flowers is remarkable

how effective and how floriferous it was. And it stood out distinctly among other good shrubs, despite its rather awkward form. The growth is upright, and as it gets its age, it may as-

Origin of Some Hybrids of *Deutzia* ALFRED REHDER

MY ATTENTION has been called to a statement made by Mr. John Dunbar in the May 1917 number of THE GARDEN MAGAZINE regarding the origin of *Deutzia myriantha*. Mr. Dunbar says that according to Lemoine this hybrid is a cross between the *parviflora* and *D. setchuenensis*, while I had given *D. Lemoinei* and *D. purpurascens* as the parents. After a careful examination of material of this plant I have no doubt that *D. myriantha* is a hybrid between *D. parviflora* and *D. setchuenensis* as stated by Lemoine, and that it has no close relation to the varieties *Fleur de pommier* and *Boule rose* which both represent crosses between *D. Lemoinei* and *D. purpurascens*. In 1913 when I first published in an article on *Deutzia* (in Moeller's *Deutsche Gaertner-Zeitung*, XXVIII, 7-9, 15-17, 25-26) an enumeration of the hybrids of the genus I had not yet seen *D. myriantha* in bloom and I apparently followed a statement made in an article on

Deutzia published in 1904 by C. Schneider (in *Mitteilungen der Deutschen Dendrologischen Gesellschaft*, XIII, 172-188) where he says that *D. purpurascens* and *D. Lemoinei* are the parents of *D. myriantha*. I unfortunately overlooked Lemoine's statement in his Catalogue No. 158 which appeared in the same year that *D. myriantha* was obtained by crossing *D. corymbiflora* (= *D. setchuenensis* var. *corymbiflora*) and *D. parviflora*. In writing my article on *Deutzia* for Bailey's *Standard Cyclopedia of Horticulture* I relied on my earlier article and, though I gave a correct description of *Deutzia myriantha* based on a plant cultivated at the Arnold Arboretum, failed to revise my previous statement regarding the parentage of this hybrid.

To set the matter right I append here short descriptions of the two hybrids confused by me. As the second hybrid has not yet received a specific Latin name, I propose for it

the name *D. maliflora*, "apple-flowered," alluding to its French varietal name "*Fleur de pommier*."

Deutzia myriantha Lemoine (*D. parviflora* x *setchuenensis*). Upright shrub with slender branches and with ovate to oblong-lanceolate finely toothed leaves 2-3 inch long, rough on both sides from minute stellate hairs, those of the upper side usually with four rays, of the under side with mostly 5-6 rays. The pure white flowers appear about the middle of June in loose and rather flat clusters 2-3 inch across; the individual flowers measure about $\frac{1}{2}$ of an inch in diameter; the green calyx-lobes are broadly ovate or triangular and pointed and shorter or scarcely as long as the calyx-tube. The stamens are about half as long as the petals; their filaments are winged and those of the outer row of stamens divide at the apex into two spreading teeth about as long as the anthers, while those of the inner row usually extend undivided above the insertion of the anther.

D. maliflora Rehder (*D. Lemoinei* x *purpurascens*). Upright much-branched shrub with ovate to oblong-ovate, finely toothed leaves $1\frac{1}{2}$ -2 inches long, with less numerous and less conspicuous stellate hairs and less rough on both sides, the hairs of the upper side with usually 4-5 rays, those of the lower side with mostly 6-8 rays. The rosy pink flowers appear end of May in numerous rather dense and short panicles about $1\frac{1}{2}$ -2 inches across and about as high; the individual flowers and the stamens are similar to those of *D. myriantha* in shape and size, but the calyx-lobes are purple, lanceolate or oblong-lanceolate and much longer than the calyx-tube. The stamens are similar to those of the preceding plant.

To this hybrid belongs "*Fleur de Pommier*" which represents the typical form of it, and "*Boule rose*."

Combining Beauty and Comfort With Stern Utility

STEPHEN F. HAMBLIN, Author of "Book of Garden Plans"

HOW ONE LANDSCAPE ARCHITECT SOLVED THE PROBLEM IN HIS OWN HOME PLOT—ADAPTING THE SCHEME TO CITY LOTS

[EDITOR'S NOTE.—So great is the zeal of many of us to cause the soil to produce food for man that shady lawns and gravelly fields that bore only indifferent grass are being urged to bring forth potatoes, beans, lettuce and kindred truck; yet little more than the original seed may in some cases be harvested. Owners of plots of good garden soil have then a double duty. While fine lawns and flower beds may now bear humbler but more sustaining crops we make extreme utility our aim—and it is well. Though the present extreme demand for food may lessen in a few years, we may be sure that there will still be for some time to come a use for all the vegetables and fruits that a man can produce on his land, however small its area. The proportion of our purely ornamental plantings will be slow to increase; the ideal is a harmonious combination of the two kinds of development, which after all is only getting back to first principles in garden making.]

CAN we not, while we make use of the soil about our house for every food crop that we can grow, still retain in large measure the beauty with which we wish it surrounded? Cannot beans, pears, rhubarb and plums, while they occupy the ground formerly given wholly to ornamental herbs, shrubs and trees, still give us really the same effects? Though supremely useful, may not our plantations be also beautiful? I think so; and with this idea in mind the present lot planting has actually been worked out. Perhaps it may help other garden builders who have much the same problem.

As will be seen from the plan, the lot is larger (75 x 220 ft.) than one usually finds in the suburbs, but even with the small 50 x 100 ft. lot the same general scheme may be carried out. The soil is very fertile, it will yield heavily with intensive cultivation, for it is in the market-garden region about Boston, Mass.

There are no trees on the lot, and none for shade will be planted, as those on the street and on the next lot to the east give the lawn sufficient shade, while the land south of the house is to be wholly open to the sun for the sake of the crops. A high Spruce hedge on the east lot line shades a part of the garden from the morning sun, so here a wire trellis bears a crop of grapes for the table and preserving. For this region a good succession is afforded by Moore's Diamond, Concord and Delaware, with the native Fox grape (*Vitis labrusca*) for canning.

The rear of the lot is bounded by the high wire fence of the Athletic Field. As excellent views are to be had from the house in this direction only a low (6 ft.) screen is desirable. For fruit as well as flowers and screen of foliage I vote for the Japanese Goumi (*Elaeagnus multiflora*, *alias* *edulis* and *longipes*). The fruit is like small red plums with the acidity of red currants, but different from either. For eating out of the hand and preserving it is excellent, and there are no bugs or diseases to spray. It is ornamental in leaf, flower, and fruit.

THE lot on the west has not been developed, but as the boys make it a way to the Athletic Field it will be well to protect the garden. The cheapest garden fence is 6-ft. woven wire covered with Hall's Honeysuckle. This may be clipped after the blooming season,

and a very neat hedge results. For variety a few plants of the new *Lonicera Henri* may be added. While its purplish flowers are not as attractive as the white of Hall's, the foliage is practically evergreen; the habit of growth is identical.

AS THE house is set rather near the street the lawn area is small, but back of the house enough is saved for the children to play croquet, and a summer house will give shade (and fruit) from the grape vines, while Rambler Roses add flowers. Instead of grapes I want to grow *Actinidia arguta* for its fruit, if I can get cuttings from a fruiting plant, for not all vines are fruit-bearing. The fruit is green, like a stoneless plum, and the taste for it must be acquired as for olives. When cooked it gives a new preserve.

A COMPOST pile (screened by the vines) saves greatly in the item of fertilizer. Into this go all the lawn clippings, leaves raked from the lawn, all vegetable refuse from the kitchen and garden, and when mixed with soil it gets ready for the next season's planting. On the south foundation wall of the house there is a coldframe of six sash, and a shady section for winter storage. By using double-glass and heat from the basement through windows in the cellar wall, lettuce and such green salads can be grown all winter with little care, and seeds started for early garden planting—no fuss with manure or heating pipes.

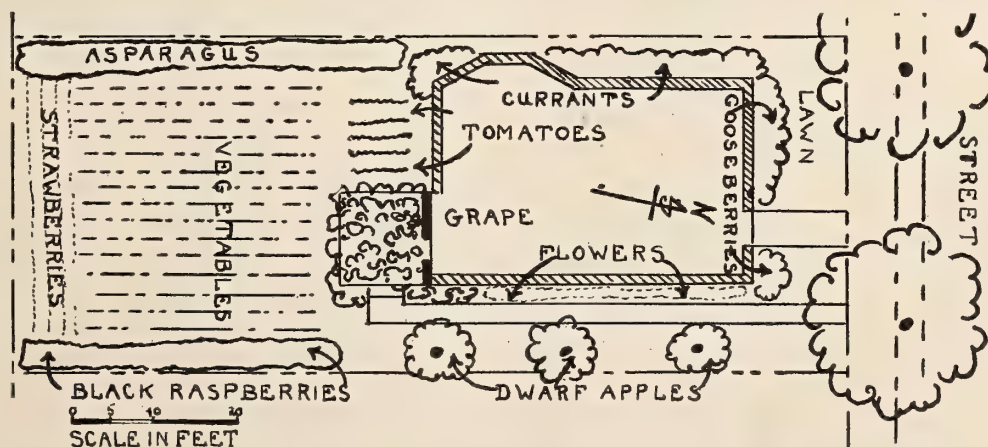
THE greater part of the lot is vegetable garden. It is arranged first of all to make plowing of the central panel easy, with little area to be dug over annually with the spade. The walk is permanent, of turf, cinders, or gravel (clean cinders are dry and weedless), and should be used to avoid walking on the plowed soil. The strip between the walk and the fences should not be plowed

(there is not room to turn the horses) so it is filled with permanent plants as a boundary planting, but instead of flowering shrubs and herbs we have asparagus, blackberries, raspberries, currants, and gooseberries.

This lot is large enough for a few fruit trees, and fruits are fully as valuable a home product as vegetables. The trees also give height, shade, interest and accent to the garden, just as purely ornamental trees will do; flowers in spring; and most useful fruit in summer and fall. The choice of varieties is a personal affair, and modified for each section of our country. For this region near Boston and for home use I have planted one Bartlett pear, one Transcendent crab, one Crawford's Early peach, and one Orange Quince—these four more for the preserves than the fresh fruit—and three Japanese plums (Red June, Abundance and Satsuma for succession) to be eaten from the tree; for I don't care for cooked plums. One of the plums may be a Sweet cherry, but the tree will get too big, and I can get more fruit in proportion from a plum. For fresh fruit the year round I depend upon four apple trees, placed 40 feet apart, these other trees being used as fillers. The apple trees may shade too much of the garden some day, but perhaps onions and potatoes will be cheaper by then. I want apples every month, so I got four young Baldwins (very hardy and thrifty in New England and a standard winter sort) and grafted upon *each* a branch of an early, a mid-season and a late variety, getting the scions from orchards in the town. One tree is thus equally Williams Favorite, Gravenstein, Roxbury Russet and Baldwin; the second, Yellow Transparent, McIntosh Red, Yellow Bellflower and Baldwin; the third, Golden Sweet, Porter, Tolman's Sweet and Baldwin; and the fourth, Red Astrachan, Snow, Wealthy, and Baldwin. Thus I shall be absolutely certain to have plenty of apples each year, though each variety bear heavily but every third year, and no season shall I get such loads of fruit that a large part is wasted.

AROUND the walk on its inner side, as it is not easy to plow close to the fruit trees, there are strips of perennial salad and sweet herbs—rhubarb, curly dock, horseradish, dandelion, lovage, sage, thyme, etc.—and the more temporary bush fruits, as blackcap raspberries and wineberries.

The true vegeta-



Adapting the small lot to a "utility plus beauty" basis of planting. Plenty of flowers for ornament as well as things good in abundance to eat

ble area is in three parts, to be plowed lengthwise, the rows running north and south. The area farthest from the house is given to strawberries, a good early and a late sort, with a row of the everbearing kind. Each year one-fourth the area is rotated with sweet corn; and after the second season's picking the berries are followed by winter turnips, or other late summer vegetable. Thus in each strip four crops are produced in four years;—(1) no crop from the young strawberry plants; (2) heavy berry crop; (3) fair berry crop and late turnips; (4) sweet corn.

The middle area is devoted to the larger vegetables—peas, beans (pole and dwarf), tomatoes, potatoes, squash, etc., as the family wishes. I find that pole beans give a greater yield per square yard than bush beans, and to avoid the nuisance of yearly poles I put them on two strips of woven wire, as I would Sweet Peas, and make a vista down the centre of the garden. Melons and cucumbers occupy too much ground in proportion to their food value, and are frequently omitted.

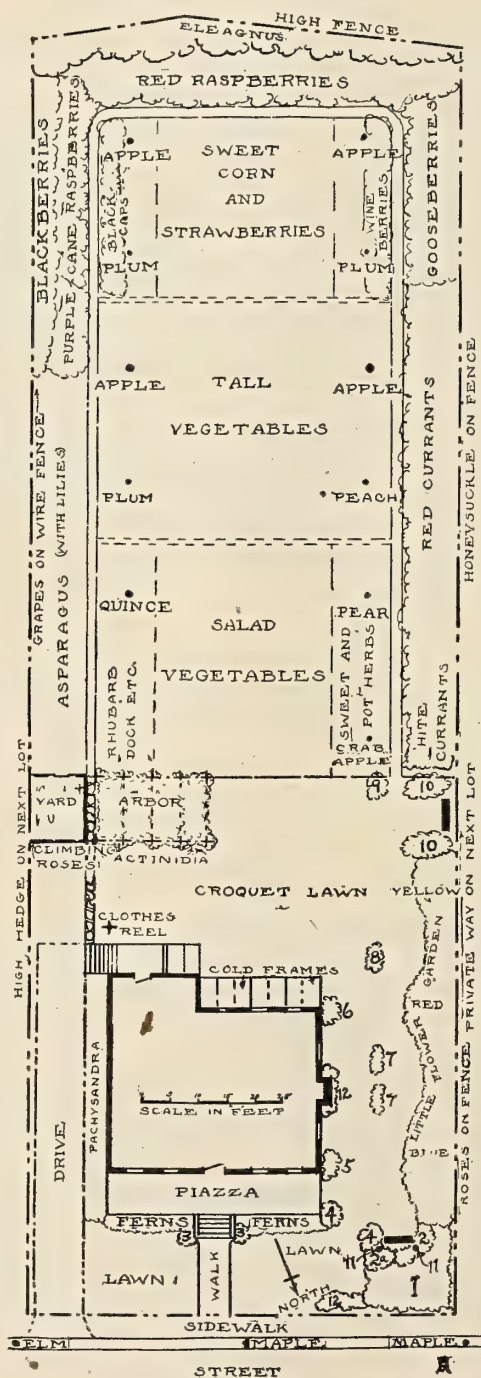
THE area near the house furnishes the salad and small root crops, as radishes, lettuce, beets, onions, carrots, cauliflower, cabbage, kohlrabi, spinach, chard, parsley, etc.; some of the rows yield a succession of crops and the last sowings go into the cold-frame for winter. As these all have ornamental foliage some of the effects of formal bedding can be gotten in the blues and purples of cabbage and beet, yellows of chard, gray blue of onion, and the contrast of feathery carrots with the broad leaves of lettuce. Try your kitchen herbs by themselves in a definite scheme, and you will admit that they may rival Coleus and associates for interest to the eye, while they interest the stomach.

THERE will still be room for a few plants whose sole use is their beauty, even in this utilitarian garden. About a dozen shrubs I have each chosen for some special merit and placed for some specific purpose. Little garden pictures are framed from the living room, and the street, and strangers need not know that behind the house all is dedicated to our food supply. To hide the little flower garden from the direct view from the street I want a shrub with nearly evergreen foliage. I find Fragrant Honeysuckle (*Lonicera fragrantissima*), the most effective sub-evergreen for this latitude, and the early fragrant blossoms are a second distinction. With it are low plants of the Shubby Evergreen Bittersweet (*Evonymus radicans* vegeta), and this forms a big vine on the big outside chimney. When loaded with its fruit in winter it rivals the classic Holly. A Red and a White Weigela give flower mass in June and heavy foliage to late autumn. An arching shrub emphasizes two corners of the house; the view to the flower garden from the street in June is framed by a mass of Deutzia; the flower garden is partly separated from the lawn by a few flowering shrubs. For hybrid Roses I have two big rugosa hybrids, and hope to cut big Tea Roses from them all summer, and they will stand six feet high. The Korean Viburnum (*Viburnum Carlesii*) I love as our Trailing Arbutus grown to a large shrub. To partly shade one seat I have a pair of Rouen Lilacs (*Syringa Chinensis*), red and white, the most graceful of the whole group, and over the other seat

a white and a dark purple Common Lilac trained high. In this way I finally chose the following flowering shrubs (numbers refer to the plan):

1. Fragrant Honeysuckle (*Lonicera fragrantissima*)—4
2. White Weigela (*Diervilla hybrida candida*)—1
- 2a. Red Weigela (*Diervilla hybrida Eva Rathke*)—1
3. Pink Slender Deutzia (*Deutzia rosea*)—2
4. Lemoine's Deutzia (*Deutzia Lemoinei*)—1
5. Hybrid Goldenbell (*Forsythia intermedia*)—1
6. Lemoine's Mock Orange (*Philadelphus Lemoinei*)—1
7. Double Pink (*Rosa rugosa* Conrad F. Meyer)—2
8. Double White (*Rosa rugosa* Sir Thomas Lipton)—2
9. Korean Viburnum (*Viburnum Carlesii*)—1
10. Summer Lilac (*Buddleia Davidii*)—1
10. White Rouen Lilac (*Syringa chinensis alba*)—1
- Red Rouen Lilac (*Syringa chinensis Saugeana*)—1
11. Lilacs Chas. X. and Marie LeGraye (*Syringa vulgaris*)—2
12. Shubby Evergreen Bittersweet (*Evonymus radicans* vegeta)—8.

THE little flower garden is another admission that my make-up demands more than food supply about my home.



This is the lot actually described in the article. It is a real war garden in the best sense of the words

Again I am restricted in area and in choice, so I have selected about 25 of the best perennials for the permanent hardy border, from 5 to 10 of each. This is the character of the test:—

1. Absolute hardiness at all times
2. Long life without annual shifting
3. Resistance to drought and disease
4. Ease of culture
5. Non-spreading roots
6. Free and long-continued bloom
7. Pleasing colors in showy flowers
8. Value as cut flowers

I make three great groupings by color, putting reds in the central part, blues toward the street, and yellows at the south end. The pale colors and the white varieties connect the three groups. I have a succession of bloom from first Squills to Autumn Crocus, and a gradation of heights from back to front, thus:

Yellows:

- Late Lemon Lily (*Hamocallis Thunbergii*), 3-4 ft. July.
- Showy Coneflower (*Rudbeckia speciosa*), 2-3 ft. August.
- Yellow German Iris (*Iris flavescens*), 2-3 ft. June.
- Butterfly-weed (*Asclepias tuberosa*), 2 ft. July.
- Lance-leaved Tickseed (*Coreopsis lanceolata*), 2 ft. June-July.
- Dwarf Orange Day Lily (*Hamocallis Dumortieri*), 2 ft. June.
- Orange Globeflower (*Trollius japonicus*), 2 ft. May.
- Gold Dust (*Alyssum saxatile compactum*), 6 in. May.
- Yellow Crocus (*Crocus Susianus*), March-April.
- Yellow Cottage Tulips, May.

Reds:

- Oriental Poppy (*Papaver orientale* in variety), 2-3 ft. June.
- Garden Peony (*Paeonia albiflora* in variety), 3 ft. June-July.
- Bleeding Heart (*Dicentra spectabilis*), 2 ft. May-June.
- Gas-plant (*Dictamnus albus* in variety), 3 ft. June.
- Garden Phlox (*Phlox paniculata* in variety), 2-3 ft. July-August.
- Miss Lingard (*Phlox suffruticosa*), 2-3 ft. June-July.
- Mountain Phlox (*Phlox ovata*), 1 ft. June.
- Scotch Pinks (*Dianthus plumarius* in variety), 6-12 in. June.
- Moss Pink (*Phlox subulata* in variety), 6 in. May-June.
- Giant Snowdrops (*Galanthus Elwesii*), March.
- Tulipa pulchella, T. jinifolia, T. Greigii, T. Sprengeri, etc. May-June.

Blues:

- Great Blue Flag (*Iris pallida* in variety), 3-4 ft. June.
- Siberian Iris (*Iris sibirica* in variety), 3-4 ft. May-June.
- Bee Larkspur (*Delphinium formosum* in variety), 3-4 ft. June-July.
- Balloon-flower (*Platycodon grandiflorum* in variety), 3 ft. July-August.
- Japanese Speedwell (*Veronica longifolia subsessilis*), 2 ft. August-September.
- Chinese Larkspur (*Delphinium grandiflorum* in variety), 2 ft. June-August.
- Greek Valerian (*Polemonium reptans*), 1 ft. May.
- Chickweed Phlox (*Phlox Stellaria*), 6 in. May.
- Scilla in variety, March Autumn Crocus (*Crocus speciosus*), September.
- Darwin Tulips in dark shades.

THE 6-foot fence with the Hall's Honey-suckle is but 4-feet. high back of the flower garden and bears Rambler Roses of the Wichuraiana type—Dorothy Perkins, White Dorothy Perkins, Excelsa, Hiawatha, Evangeline, and whatever others you wish. For fall bloom, instead of Clematis paniculata, I have two plants of Climbing Knotweed (*Polygonum baldschuanicum*), and I shall try the new P. Aubertii. These have the Clematis outplayed every way as to beauty and grace, and have a longer season of bloom.

It is certain that little else can be added to the ornamental planting, for the lawn is tiny as it is. But yet plants whose first value is not edibility can be squeezed in here and there. The narrow grass strips along the drive, so shaded that grass will not grow, have been covered with Pachysandra terminalis and Lily-of-the-Valley for foliage and flowers, and Squills and Snowdrops shoot up in the spring. Against the piazza I have ferns, only the Cinnamon and Interrupted

Ferns (*Osmunda cinnamomea* and *O. Claytoniana*) for these give the greatest foliage per plant and are permanent as a Peony. With them I have planted light-colored Darwin Tulips.

Lilies, the tall hardy sorts, as *L. tigrinum*, *L. speciosum*, *L. Henryi*, *L. elegans*, *L. superbum*, *L. regale*, *L. Sargentiae*, I am adding to the asparagus bed to the detriment of neither. Narcissus of all sorts form an irregular row under the grape trellis; a double row of *Gladiolus* divides the salad garden. I am now trying to find a few more spots where flowering herbs can go in among the fruits and vegetables without taking up valuable room.

But I nearly forgot the most distinctive flower feature of the place—the window boxes. Six of them, of the self-watering kind, are placed on the piazza rail. As they are on the shady side of the house, I must have shade-enduring herbs. For main effect there is a very vigorous double-flowered form of red everblooming Begonia, and two boxes of them in the house in winter fill the six in summer. The inner side droops in Wandering Jew (*Tradescantia fluminensis*), green and variegated. As it is tender a sufficient stock is carried over winter in the two boxes of Begonias in the house. The front face is Creeping Charlie, Moneywort (*Lysimachia Nummularia*); as this is hardy it is dumped in the vegetable garden in the fall and divided again for the boxes in the spring. When I

want the boxes different I can use the other Wandering Jew (*Zebrina pendula*) and the Begonia can vary to any of the semperflorens type in pink, rose, and white.

FOR the initial planting of this lot, it would require some \$50.00, but I obtained many plants by exchange, gift and seed. The yearly cost for seeding and plants is less than \$5.00, allowing for a few new vegetables and bulbs each year. For tools I have spade, spading fork, two hoes, wheel hoe and attachments, lawn mower, pruning and grass shears, wheel barrow and knapsack sprayer. There are other tools I would like, but I make out with the present equipment. As for time, it takes about a day a week during the growing season (an hour or two daily), but for planting and first weeding at least two days a week are required. By keeping the permanent plantings mulched with dry litter and grass clippings, the weeding of many beds is nearly avoided.

This lot gives fruit and vegetables the year round for a family of five, flowers for the table and the neighbors, and from the street or house windows has its interests and beauties all the year. As an investment it repays in cash a thousand times the yearly outlay in money and time while the intangible returns cannot be shown by measure. Extreme utility and beauty can be combined in the same lot.

WITH small grounds, such as the 40 x 100 foot lot often available for the suburban dweller, many of these fruits and vegetables must be omitted, and preference given to those that require very little room in proportion to the crop. A suggested layout for such a plot is given on page 23. I should prefer that the house be near the street, and the area between house and street would be in lawn. A few fruiting shrubs, as currants and gooseberries, may be planted against two sides of the house. Shade will be afforded by the trees on the street. A grape vine gives shade and fruit over the rear porch, and on a trellis along the east side of the house. Beneath the grape a few spring bulbs and such enduring herbs as German Iris and Phlox will give a bit of flower garden. The remaining half of the lot is to be plowed (or rather spaded) yearly, but the sides and rear are in permanent planting, as asparagus, strawberries, black raspberries, etc. (but not red raspberries or blackberries as they spread underground too much for so small a place). Along the east line three dwarf apples (early midseason and late) are all the orchard fruit possible. Tomatoes on trellis or poles may be grown close to the south wall of the house. The 30 x 30 ft. central area is planted in north-south rows of salad vegetables, dwarf beans and peas, and such other low growing vegetables as the family wishes.

Sweet Peas and Snapdragons

G. W. KERR,

President American Sweet Pea Society

BRAND NEW WAYS OF HANDLING—IT MEANS WORK BUT IT GETS BIG RESULTS—TRY IT

ISN'T it fortunate, in these times particularly, when we need so much to turn to gardens for solace and refreshment of spirit that some flowers can be had by everybody without any effort—they almost "grow by themselves." It is because they are so easily grown that as a rule they are not particularly well grown.

Two popular flowers that are pre-eminently worth while—Sweet Peas and Snapdragons—will respond amazingly to extra care in cultivation. They come in a rich range of colors, and are useful beyond compare for cutting and indoor decoration; and they give the longest season of bloom—June to frost. The Snapdragon can be taken up and brought indoors for winter bloom. This cannot be done with Sweet Peas, however. Both these flowers are eminently adapted for the American garden as this country now produces all its own seed, and more.

FORTUNATE indeed is the Sweet Pea enthusiast who is located in a section where the average climatic conditions are such as to ensure a regular crop of first class flowers without any very special preparation. Such conditions are found in our Northern states, Canada and some parts of the Pacific Coast, where, even should the days be very warm, there is a compensating coolness at night.

In such favored spots, and always provided that the soil is in good heart, excellent results may be had by either plowing, or digging the soil one spit deep and sowing the seed as early in the spring as soil conditions will



This is the "new idea" in growing Sweet Peas. Individual seeds placed 2 inches apart in furrows $\frac{3}{4}$ in. deep. The plants are transplanted in due season

allow. More intense preparation, i. e., turning the soil over an extra twelve inches deep, and an extra supply of well made (thoroughly rotted) manure will well repay the grower.

But for one grower who has perfect soil and climatic conditions there are hundreds of others. However, even under adverse conditions we can be reasonably sure of a good crop of bloom by careful attention to demands.

AS I explained in the September number of THE GARDEN MAGAZINE, Sweet Peas can now be most successfully cultivated in our hot Southern states by using varieties of the new "Early-flowering Spencer" type, and sowing in the fall. Fall sowing can also be relied upon for many other sections.

However, spring is upon us and where no preparation was made in the fall, we must now make the best of present conditions.

The two essentials to successful Sweet Pea culture are: (1) Thorough soil preparation; (2) Starting the seed early.

Soil preparation consists of turning it over deeply and incorporating well-made manure with a liberal hand. Choose a position in the garden well exposed to the sun but which is, if possible, well sheltered from draughty winds. Do not work the soil when wet and sticky, but get it turned over early that it may become consolidated previous to sowing or planting.

What "Thorough" Preparation Means

BY THOROUGH soil preparation I intend that it be trenched two to three feet deep. It is better to trench the entire patch, but, should that not be possible, where the rows are to run, the ground should be trenched two feet wide. Throw the top soil to one side and the bottom soil, which is usually rather poor, to the other. Loosen up the bottom of the trench with a pick or stout digging fork, at the same time mixing in well rotted manure, old garden refuse, or leaf mold. Then return the bottom soil working in with it more rotted manure or leaf mold, and previous to replacing the top soil give the trench a dressing of fine bone meal at the rate of two to three ounces per yard of row. Where soil is light, use, if procurable, cow manure, but in all cases leaf mould when manure

cannot be had. When the trench is finished give it a dusting of powdered lime (freshly slaked lime), raking it into the surface. Two to three ounces per yard will be sufficient.

Because this work is best done in the fall, the soil settling during winter, it is essential in spring preparation to thoroughly consolidate the trench by treading previous to planting, otherwise it will dry out quickly.

Seed Sowing Under Glass

YOU will have better, stronger and taller vines and a much longer flowering season, while the plants will begin to bloom two to three weeks earlier, by starting the seed under glass. Sow during this month



Outdoors in April the lavender and blue flowered kinds, and all white seeds are best sown in a shallow furrow of pure clean sand

(February) and as early as possible. That will give sturdy, well rooted plants ready for setting out during April.

A cool greenhouse, mild hotbed, or even a coldframe, is necessary for modern Sweet Pea culture. When using wooden flats, fill two thirds with a medium compost, i. e., soil neither too light nor yet very heavy. On top of this put one inch of coarse sand, in which the seed is sown. Mark out little furrows two thirds of an inch deep and two to three inches apart. After soaking the seed for twenty-four hours in warm water, sow the individuals two inches apart. Cover and press firmly. The seed is thus sown no deeper than two thirds of an inch.

Training Up the Young Plants

BE CAREFUL not to over-water until the seed has made a good start. Indeed, if a coldframe is used to house the flats, it may not be necessary to give any water at all until seedlings are well through the soil. When watering, always apply in the morning while the days are short and the nights apt to be cold and frosty. During such weather cover the frames at night with burlap or old sacks. When the plants are two to three inches high give air on fine days. The Sweet Pea is a hardy fellow and very impatient of coddling; therefore see to it that the sashes are freely opened during bright or mild weather. When the plants are four inches high, pinch out the tip of the shoot to encourage side growths, which will appear from near the base.

As the weather becomes milder, the sash may be removed entirely during the day, and early in April, unless during severe frost, kept off entirely night and day.

Usually around the second week in April (latitude of Philadelphia) it is time to plant out, and if the ground is then ready for them get the plants transplanted without delay. In transplanting remove one end of the flat as this will allow you to handle the plants more easily and eliminate the danger of breaking the roots. Plant six inches apart in the row, and make sure that the roots are not twisted in planting, making the hole sufficiently deep to take care of the longest. They should now have a period of six weeks of cool and (usually) moist weather to store up sufficient strength to give a bountiful harvest of bloom from early June onward.

Sowing in the Open

IT IS seldom that soil and weather conditions will allow us to sow before the first week in April. When we can manage it, we prefer to sow toward the end of March. When sowing in the spring, cover the seed *not more than two inches*. To make sure of a perfect stand of the white seeded and lavender varieties, which have very tender seed coats, they should be sown in sand. Make the furrows for these varieties a little deeper, say three inches, fill with pure coarse sand, and sow therein, two inches deep, not more.

To eliminate the danger of seed rotting and ensure perfect germination, soak all varieties in warm water as recommended above. When two inches high, thin out the seedlings to stand *four to six inches apart*.

Varieties to be Depended Upon

WHERE the flowers are wanted primarily for cutting in quantity, a few of the new Early-flowering Spencers must be grown as they will prolong the blooming season. This type naturally begins to flower at least two weeks ahead of the regular or summer flowering Spencers, and, when no seed pods are allowed to form, continues blooming freely throughout the season. Their great value for cutting is readily apparent, and I have proved that full dependence can be placed upon the following:

EARLY FLOWERING SPENCERS

EARLY ENCHANTRESS, a charming rose-pink with deeper edges.

EARLY PRIMROSE BEAUTY, rich primrose flushed rose.

YARRAWA, a very large rose-pink with cream base.

EARLY SNOWSTORM, pure white.

EARLY PINK BEAUTY, soft pink self.

EARLY KING, bright crimson self.

EARLY LAVENDER KING, a beautiful clear lavender self.

EARLY ROSY MORN, rich rose with crimson standard.

EARLY SANKEY, a large black-seeded white self.

SUMMER FLOWERING SPENCERS

CONSTANCE HINTON and KING WHITE, the best whites.

FLORADALE FAIRY, cream self, gives many double flowers.

MARGARET ATLEE, MRS. ROUTZAHN, LILIAN, and DORIS USHER form a quartet of the best cream pinks and all quite distinct.

ELFRIDA PEARSON, light pink, a beauty.

HERCULES, the best deep rose-pink.

ILLUMINATOR, salmon-cerise.

FIERY CROSS, fire-red self.

THE PRESIDENT, orange scarlet self.

KING EDWARD SPENCER, rich crimson.

ORCHID, a rich true lavender.

MARGARET MADISON, light blue.

KING MANUEL, deep shining maroon.

ROYAL PURPLE, a true purple self.

CHERUB, cream edged rose.

Snapdragons for Bedding and as House Plants

THE Antirrhinum is surely coming into its own as the great value of this fine old plant is being universally recognized. Specially selected strains are grown in large quantities under glass for winter and spring flowering.

It is, however, its value as a bedding plant or where it is grown for cutting in the open that will appeal to the average flower lover. Since the war began it is now taking the place of the Ten Week Stock (seed of which used to be imported from Germany), for bedding purposes, in the gardens and parks of the British Isles.

Thanks to the good work of the seed growers the Snapdragons now offered may be relied upon to come practically true to color from seed, and many fine and distinct varieties have been evolved.

Antirrhinums are classified as tall, medium or intermediate, and dwarf or Tom Thumb. The heights of the sections are relative and will somewhat differ with different soils and locations. The tall section usually attains a height of about thirty inches; the intermediate section, eighteen inches; and the dwarf section nine to twelve inches. These heights are taken to include the top of the flower spike. The intermediate section is undoubtedly the most useful, and includes the best varieties and greatest range of color. It will run to three feet under glass.

As the Antirrhinum is readily cross-fertilized by insects, the various colors must be well isolated when grown for seed to ensure fixity of stocks.

Treating the Plant as an Annual

THE Antirrhinum is a perennial, but best results are obtained by treating it as an annual, sowing the seed in February or early March and placing the seed flats in heat.

Shallow wooden flats three to four inches deep as suggested for Sweet Peas, filled with a fairly light compost, are the best means of sowing the seed. The soil should be well watered about an hour previous to sowing. As the seed is quite small—minute indeed—it must not be covered deeply, but only just covered to a depth of *one sixteenth of an inch*.



No, not "Somewhere in France," but merely the proper way to prepare your garden "Everywhere in America" for Sweet Peas. Three feet deep, two feet wide, and properly enriched with manure, bone, lime, etc.



Here's a portrait of Cottage Maid Antirrhinum, pink and white, reduced in size. The Snapdragon is indeed for the million, indoors and out

planting out time will ensure the plants being true to color when they come into flower.

To ensure a bushy, free branching growth, pinch out the tip of the main stem when planting.

Sturdy plants, three to four inches high, set out in good soil toward the end of April should begin to bloom in July, and if all spent and withered flower spikes are rigorously removed, the plants will continue blooming until frost.

In fact, it requires a killing frost to stop the activities of this charming flower—a few degrees of frost does not harm them.

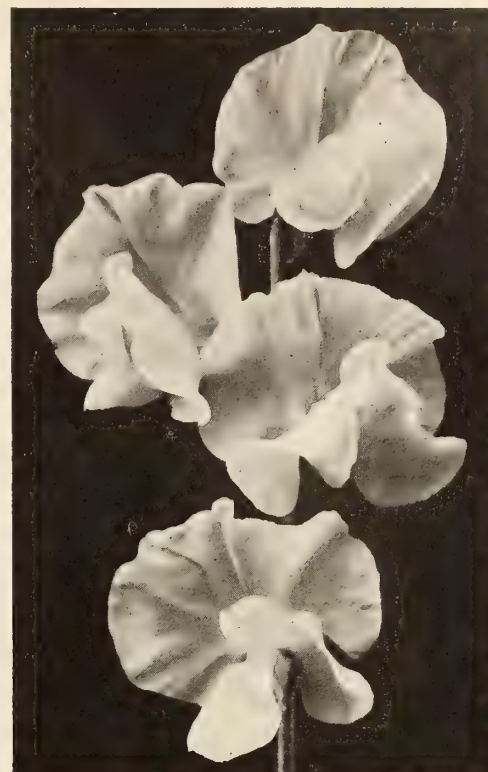
Lifting for Fall and Winter Decoration

IN OCTOBER the Antirrhinum plants are invariably full of vigor, and carrying numerous flower spikes, both in bloom and bud. They may then be safely lifted and planted in pots or boxes for house or conservatory decoration, where their beauty and distinct delightful fragrance make them doubly welcome.

Should the weather be dry, thoroughly soak the soil around the plants which are to be removed, so that as much soil as possible may adhere to the roots. This soaking must be given a few hours previous to transplanting. Pot firmly and keep shaded for a day or two, at the same time giving copious supplies of water. Placed in a good window or conservatory, such plants will continue blooming freely for several months.

Worth While Varieties

HAVING had the opportunity of observing all the varieties introduced during the past few years, grown in comparison with the



Oh yes, you can do better than this even, for the photograph shows the flowers only about $\frac{3}{4}$ actual size (Early-flowering Spencer Lavender King Sweet Pea)

After sowing, press the soil firmly with a flat board, and cover with a sheet of glass to conserve moisture and hurry germination. Shade the glass with paper, removing the shading and tilting the glass as soon as the seedlings begin to appear through the soil. When the plants are about one inch high transplant three inches apart, into other flats, which should contain rather richer soil.

Failing a greenhouse the seed should be started in a hotbed or in the window of a warm sunny room. After transplanting keep in the same temperature for a week or two, afterward placing in a cold-frame. When well hardened (which should be about the middle of April), plant into permanent quarters in well enriched soil, and set out the plants eighteen inches apart each way. *In transplanting be careful to disturb the roots as little as possible.*

Splendid color effects may be obtained by using the finest named varieties. When growing seedlings for bedding, carefully examine the foliage and stems of each plant, to see that all are alike, as the colorings are shown in the whole plant. It is a simple matter to see that all are true to one foliage type. A little care at

best standard sorts, I can thoroughly recommend the following intermediate varieties as being unsurpassed in their various colors:

BRILLIANT ROSE, a lovely shade of clear rich rose.

COTTAGE MAID, deep pink with white tube.

DAINTY QUEEN, a most attractive shade of salmon-buff.

DEFIANCE, bright crimson-scarlet.

DELICATE ROSE, pale rose-pink.

FIRE FLAME, vermillion or fire-red.

PRINCE CHAMOIS, a golden chamois shade.

QUEEN OF THE NORTH, a grand pure white.

YELLOW QUEEN, rich butter yellow.

These intermediate varieties grow about eighteen inches high.

In Alabama

IN SPITE of the fact that out-of-door flowers are so plentiful most of the year, it is not always an easy matter, even in southern Alabama to find plants that will bring color and cheer to the garden through the winter months.

I was most successful with Antirrhinum (Snapdragon).

It saves time and labor to buy the plants, or cuttings. I set mine on about November first, placing the plants one foot apart.

The plants began blossoming almost immediately and continued to blossom throughout the entire winter, regardless of frosts, until late in the summer.

EVELYN VOSE PECK.
Alabama.



The Snapdragon is a good-natured plant, flowering outdoors in summer and can then be brought indoors in fall for winter bloom. The photograph shows one plant of Dainty Queen lifted and potted

Laying the Bugaboo of Disease

W. H. RANKIN
Cornell University

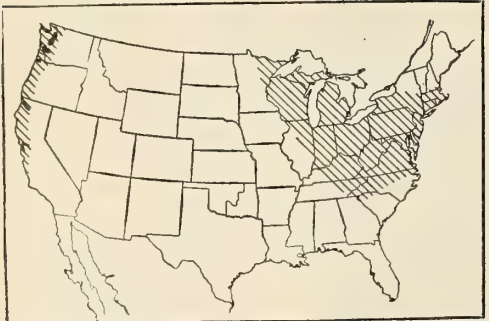
DISTRIBUTION AND CONTROL OF SOME IMPORTANT PLANT PESTS—ROSY OUTLOOK FOR THEIR MASTERY—
NATURAL CONDITIONS THAT HELP THE GARDENER

GROWERS often become discouraged because native or newly introduced diseases seem to make impossible the further successful cultivation of certain plants. In most cases this pessimism is unwarranted. In the first place destructive diseases which seriously affect production are usually limited to certain regions. This is due to the influence which temperature and moisture play in determining the rate of spread and destructive potentialities of the parasitic fungi or bacteria which cause plant diseases. Likewise, the variations in these climatic conditions may lead to little or no loss during certain seasons and extreme losses at other times. It is thus possible to grow certain crops with less chance of loss in some sections of the country than in others. If, however, the crop is grown where losses commonly occur, the grower may usually apply definite control measures which have been proved practicable.

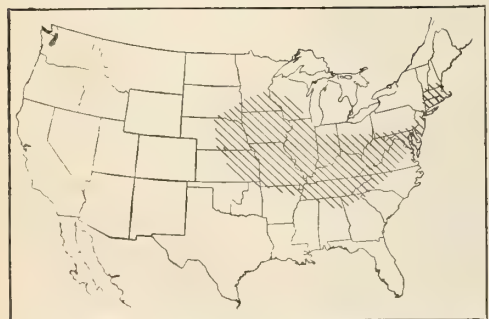
THE fungus causing the late-blight and rot of potatoes was brought into this country many years ago, supposedly from



Late-blight and rot of potatoes is most destructive in northeastern and north central United States. The early spring crop in the South is also affected frequently. Spraying potatoes, in the northern region indicated, is a necessary part of potato culture.



Peach leaf-curl is most common in the areas here indicated. Generally speaking, all growers in this region must spray every year to avoid frequent losses.



Apple-rust is common in certain portions of the area shown on this map. Many of the other similar rust diseases of Juniper, pear, quince, Haw, Service-berry, and Mountain Ash occur in the same region.

Ireland where it had been introduced from South America. In the accompanying map is shown the regions where late blight and rot occur more or less destructively according to the seasonal conditions. Comparatively low temperatures and abundant moisture are required for the development of the causal fungus. *It is, therefore, not destructive in the South except in the case of the early spring crop and at high altitudes where the temperatures are more like those in the North.* In the northern regions, however, spraying with bordeaux mixture, 5-5-50 will not only prevent late-blight and rot, but will also diminish losses from early-blight, tip-burn and flea beetles. All these troubles are so common that they do not need description.

Begin spraying when the plants are about six inches high, followed by subsequent applications at least every ten or fourteen days until the time when the tops are killed by frost. Continuous spraying is necessary even though the blighting of the tops late in the season may not seriously reduce the yield, for the reason that serious losses from rot may follow if the blight obtains a foothold. Spraying accomplishes the best results if the mixture is applied just long enough before rain periods for it to become dried. It will not wash off, as is generally supposed, and is present on the leaves at just the time it is most needed, since the fungus is distributed through the field and invades the leaves while the plants are wet.

PEACH-leaf-curl has been in this country for a long time and although it occurs, to some extent, wherever the peach is grown, it is destructive only near large bodies of water and in regions with a cool climate and abundant rainfall. The conditions which lead to destructive attacks are warm weather at the time the buds burst, followed by a cool humid period of several days. The resistance of the newly exposed leaves seems to be lowered by the cessation in growth due to the cool weather and at the same time these weather conditions are favorable for the development of the fungus. The disease makes its appearance as soon as the leaves unfold. The leaves are at first thickened and puckered along the mid-rib, causing the leaf to curl. The diseased portion of the leaf is brittle and slightly yellowish, tinged with red. The affected leaves finally drop from the tree and new leaves come out later from dormant buds. The twigs may also become affected.

One application of any common fungicide, at any time after the leaves fall in the autumn (and before the buds burst in the spring) will prevent this disease. Every twig and bud must be coated with the fungicide in order to destroy the over-wintering parts of the fungus. Lime-sulphur, 1 gallon to 8 of water, bordeaux mixture at any common strength, and copper sulphate 2 pounds to 50 gallons of water, serve equally well for the control of this disease.

MANY of the native rust fungi which cause important diseases of ornamental conifers and pomaceous shrubs and trees (apples, etc.) are controllable by separating the two kinds of trees which these fungi require for the completion of their life-history. Several of the rust diseases of the cultivated apple, pear, quince and Mountain Ash, and

ornamental species of Haw and Service-berry require the presence of certain species of Juniper or Red Cedar in the immediate locality, otherwise the rust fungus can no longer perpetuate itself. Serious defoliation of the pomaceous trees results when Red Cedars are in close proximity and the Cedars themselves may be deformed by the production of cedar-apples, witches' brooms, knots, galls and long spindle-shaped swellings of the trunks and branches. The spores formed on the deformed parts of the Cedar cause the infection of the leaves, twigs and fruit of the trees of the apple family and in turn the spores from these trees cause the infection of the Cedar. Spraying the Cedars or the pomaceous trees has not been found practicable. On the other hand by separating these two kinds of trees by a distance of a half mile or more the chances for the exchange of spores between them is reduced to the point where the damage they may cause is unimportant.

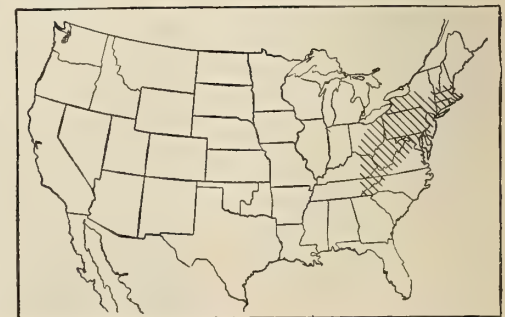
SEVERAL rust diseases of Pines are similar in nature, in that the association of a certain other kind of plant is required else the fungus cannot exist in the



The fungus causing the blister rust of White Pine is now known to be prevalent in the areas here shown. The stages on the gooseberry and currant have been found abundant. Important infestations of Pine forest areas are known in the New England States and New York.



Bean anthracnose occurs destructively in the northeastern and southeastern parts of the United States. In the South only the early spring crop is affected. Pod selection will yield clean seed and reduce losses materially.



The chestnut blight fungus has now spread to practically the entire area where the chestnut grows abundantly.

region. In the case of the White Pine blister rust, just recently imported, currant and gooseberry bushes are necessary for the completion of the life-history of the fungus. The affected Pines show tapering swellings of the branches from two to twenty years old. From these swollen branches, white or yellowish bladdery structures are pushed out early in the spring. These blisters are ruptured and the yellow spores within are blown away by the wind as a fine powder. *They are innocuous to the Pine and if they do not lodge on the leaves of currant or gooseberry bushes they cause no further harm.* On finding lodgment on those plants, however, the leaf tissue is invaded and soon spores are formed in small yellowish spots on the under sides of the leaves. These spores can infect other gooseberry and currant bushes. This process may be continued until several generations of these spores have caused the infection of large numbers of bushes for miles away from the affected Pine. In the late summer another kind of spores is formed on brown hairs on the under sides of the affected gooseberry and currant leaves. These are carried in all directions by the wind and if they lodge on the young twigs of five-needled Pines a new infection is started. By separating the two kinds of plants by a half mile or more, as in the case with the Red Cedar rusts but little chance is afforded for the successful interchange of spores. Many species of two- and three-needled Pines are subject to similar diseases caused by native rust fungi. These diseases do relatively little damage except to young trees and then only when the required alternate plant is present in abundance.

THE extent to which the White Pine blister rust will affect the White and other five-needled Pines in this country cannot at the present time be predicted. The fungus has been in this country for more than ten years and has recently been found to have spread over a large territory. The required alternate hosts, the gooseberry and currant, are common weeds throughout the range of the five-needled Pines. This group of Pines includes some of the most important forest trees both in eastern and western United States. The accompanying map shows the distribution of the fungus as last reported. Eventually, no doubt, it will spread to all sections of the country where five-needled Pines and gooseberries or currants are associated. The temperature and moisture relations which will effect its destructiveness are not known at present. Likewise, no data are available as yet on the percentage of the younger trees which will be killed by it under different conditions. In such regions as Long Island and the lower Hudson River valley where these trees are important as ornamentals the disease may be easily avoided by eradicating the door-yard and garden currants and gooseberries since the wild species are rare.

THE majority of the destructive parasites as mentioned above are limited to certain regions by temperature and moisture relations. The severity with which they affect their host plants as a rule is further limited by the relative susceptibility of different varieties or even the individual plants of the same variety. Many commercially important resistant strains have been developed by selecting and propagating the individual plants which fail to develop the disease in question when the majority of the crop is killed around

them. By starting with a single resistant individual, a desirable resistant strain may be developed if its other qualities are satisfactory. Strains of melons resistant to wilt, cabbage to yellows, asparagus to rust and beans to anthracnose are a few examples of those that have been developed and are proving successful. The grower can often develop such strains in his own field by carefully selecting seed from plants of normal size and desirable quality which are at the same time free from disease. Even if this practice does not yield resistant strains those fungi which winter over in the seeds will be eliminated from the new crop the next season. One of the best methods of controlling bean anthracnose or "rust" is to select the pods which show no reddish brown or black cankered spots and the seed in such pods will be disease-free.

THERE are several other methods of avoiding losses from diseases which are simple and easily carried out. Several species of fungi attack ornamental shrubs and herbaceous plants in the garden causing diseases known as powdery mildews. The mycelium of these fungi grows externally on the upper or under sides of the leaves producing a white powdery coating. Often these mildews cause the stunting of the leaves and twigs and defoliation may occur. By dusting the affected leaves with flowers of sulphur or finely ground sulphur flour, the mycelium of these fungi is killed. *Sulphur dust is most effective during warm, clear weather, if applied early in the morning while the plants are still moist.* The club-root of cabbage, a disease which causes swollen and deformed roots, may be controlled by applying good stone lime to the soil at the rate of 2 or 3 tons to the acre. The application should be made the autumn before planting; eighteen months before planting is better.

The subject of the importance and destructiveness of some newly imported parasite is frequently brought to the attention of the grower. Popular articles concerning these new troubles and predictions of great depredations to follow often cause the layman to overestimate the relative importance of such diseases. Taking the United States as a whole there are many common and destructive diseases of ordinary crops which cause losses of millions of dollars annually and there is little attention given to the fact. Newly imported parasites sometimes cause unusual destruction to particular crops. The apparent greater powers of destructiveness of introduced parasites as evidenced by the powdery mildews of grapes and gooseberries in Europe and asparagus rust and Chestnut blight in this country are due to the larger percentage of susceptible individuals in the new territory. In the regions where the parasite has existed for centuries the more susceptible individuals have been eliminated by a slow process of natural selection leading to a resistant race of plants. But when the same fungus is transported to another continent it finds an unselected race, the majority of which, in some cases, will be very susceptible. Such great destructive potentialities, however, are fortunately the exception and not the rule. With our present knowledge of these facts and the progress that may be made in the future, it is reasonable to expect that much of the losses now sustained may be avoided. Already certain investigators are obtaining hopeful results in breeding a desirable Chestnut tree which is resistant to blight. Selec-

tion and breeding methods to obtain resistant races may be augmented later by scientific methods of artificially immunizing plants to disease.

With this hopeful outlook for the future and the easily applied protection measures now available for most of the common diseases, growers should do their best to incorporate disease-control methods into the more routine cultural practices. The grower must accept as final the fact that some attention to plant diseases on his part is necessary in order to grow clean crops and it is largely up to him to acquaint himself with the control methods to be used.

The Leaf Blister Mite on Pear and Apple Foliage

NEARLY everywhere one can find during the summer small corky areas on pear leaves. These are the homes of the blister mite, which only comparatively recently has become a very serious pest. But I have found it in almost every orchard visited in two years infecting the pear, and in New York state, in addition, it has found the foliage of the apple trees.

It is hardly necessary to describe the blister-mites because they are so small that to be seen a microscope must be used, but their work is very plain. Early in the summer minute greenish pimples appear on the leaves of the pear trees. They enlarge and on the under side of the leaf they have a sort of green velvety appearance; but this does not last long, for they soon change, becoming reddish, sometimes very brilliant, and later the tissue dries up, and becomes dark brown or black and corky. The pimples house the leaf mites. In here they breed and rear the young, the injured areas becoming sometimes as much as an eighth of an inch in diameter and somewhat irregular in shape. When these pests infest apple leaves, the spots are usually less brilliant.

On badly infested trees the foliage drops prematurely. In the fall the mites desert their homes on the leaves and hunt winter quarters under the scales of the buds. The mites do not again make their appearance until the early spring when the buds are swelling preparatory to opening, then they come out and are ready to attack the leaves as soon as they emerge from the buds.

The eradication of this pest is not difficult if the trees are sprayed in the fall when most of the leaves have fallen. Use either kerosene emulsion, diluting the stock solution with five parts of water, or lime-sulphur wash, at the same strength as used for San José scale. If commercial lime-sulphur wash is used this will mean diluting one part in eight or nine parts water.

By making a spraying in the fall when the majority of the leaves have fallen, the mites can be reached while still in the pubescence of the buds; if done late the mites will have tucked themselves away under the bud scales where they are much harder to reach. On badly infested trees this spraying should be repeated in the spring just as the buds are swelling and at this time it will be better to use the lime-sulphur wash, as in addition to killing the mites, it will kill any San José scale which may be upon the trees and it will also catch most of the plant lice, for their eggs are hatching at this time.

Penna.

HAROLD C. CLARKE.

What Kind of Soil Have You Got? A. E. WILKINSON

VERY FEW OF US HAVE THE "IDEAL" BUT THAT'S NO CAUSE FOR DESPAIR—SPECIAL MERITS OF EACH TYPE

THOUGH the ideal would be a sandy soil with good soil texture, high moisture and air content, and good subsoil, yet the practical fact remains that most of us have to put up with the particular soil of the region. To improve the soils not ideal, our most important step is working in a supply of manure. It is not possible to obtain too much manure. Some of the best truck gardeners near the larger cities secure and apply as high as forty and fifty tons of well rotted manure to the acre. If the home gardener will consider just what this manure does to the soil—supplying plant food, increasing the water-holding and air-holding capacity of the soil, and increasing the root activities—there is one question that he would be quite willing to obtain a large supply of manure for the work of improving his garden. This manure is to be turned under and thoroughly harrowed and mixed with the soil.

The first point to notice is the texture of the soil. By texture is meant the size of the particles and the friability or looseness of the soil. A good example of a soil of fine texture is seen in that found in the average commercial greenhouse. It has been "manufactured," by mixing. A good mixture is one part well rotted manure, one part sand, and two parts rotted sod. In the garden the object is to strive to reach this type as nearly as possible.

If a soil with a very early or quick characteristic is desired a *coarse sand* is indicated because the *coarse sand* is well drained and, therefore warms up very early in the spring, advancing the time at which planting may begin. Coarse sands are also warmer throughout the growing period which respond easily to irrigation. Soils of this particular type need liberal applications of humus-making material turned under yearly. This material may take the form of stable manure or green crops.

Medium sands are not quite so early as the coarse sands; nor so productive. However, they do hold the moisture and plant food much longer. The fine sands are the most productive garden soils, because of their lessened expense in maintaining fertility. Coupled with this, they have some of the advantages of the medium sandy soils.

The *clay soil* is the least desirable for the majority of vegetable crops. They are of very fine texture; so fine indeed that they come into a very compact condition very easily, necessitating great care in management. By proper management and the addition of certain materials, and in the course of time, the correct granular condition will be brought about in a clay soil. The necessary steps in handling clay are, first, to apply a

large amount of horse manure which has a tendency to loosen the soil and render it more porous. From four to six inches of manure spread over the surface is none too much. This may be repeated yearly. A heavy application of manure in the fall may be repeated the following spring. In all cases the manure should be thoroughly incorporated with the soil by plowing and fitting.

Clay may be improved by the addition of other soils of differing characteristics. Coarse sands or stove coal ashes can be mixed with a clay garden soil and will correct its faults.

making them very lumpy and less productive.

Between the clay and the sandy soils are the *loams*. These loams may vary from light heavy and in all cases are easy to manipulate and are adapted to a wide range of garden crops. They are, as a rule, the soils in the average garden.

The *average moisture* that a soil contains is of great importance. Now water is held in the soil in several ways. There is capillary water, sometimes spoken of as film water, because it is water that surrounds each particle of soil as a film. Where the particles of soil are very small the greatest

amount of film or capillary water is found. Free water is that which is found in the soil between particles and is of little benefit to the growing crops. As a rule, the smaller the particles of soil, the greater the absorptive power of this soil. Taking this statement in terms of soil, sandy soils (especially the coarse sands) suffer a great deal more during drouth than do the clays or silty soils. Therefore, it is often necessary to irrigate. If soil is weak in the capillarity of the subsoil, that is, if the subsoil is composed of large particles, a crop of good size cannot be

matured during the average season *unless some form of irrigation* is practised. The depth of the water table would have a great influence on the strength or weakness of this capillary action. This water table or free water should not be too high, causing the soil to be soggy. The land should at all times be well drained. However, it is important that this drainage should not be overdone, because, if one wishes to produce a large crop, an abundant and constant supply of water is absolutely necessary.

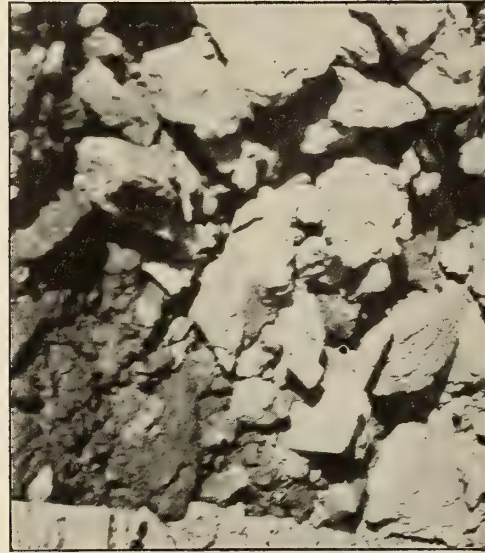
In many cases a correct system of drainage will consist of nothing more than a line of three- or four-inch tile running across the garden and draining the low spots.

Soil temperature is another factor. This depends, generally speaking, upon the water content and air content. If the soil is full of water (thereby being low in air content), it is generally cool. Clays are of this type. If the air penetrates the soil to some depth, it has a tendency to warm up the soil quickly in the springtime.

Near the surface of the soil the temperature is higher. The *color of the soil* also has some influence upon the temperature. Dark soils tend to absorb heat and are spoken of many times as being warmer, whereas the light soils throw off or reflect the sun's rays and the heat and are sometimes not quite so warm. If the relationship of moisture and air is taken into consideration, however, color will not be found to have so great an influence.



Gravelly soil is generally over-drained because of space between particles. Manure is a binder, filler, and moisture holder



Clay soil. The particles are very small and bind or cake as shown. Unsuitable to crops. Needs some filler and cultivation

Mulching improves a clay soil. This may consist of composted materials such as garden waste, lawn rakings, leaves and other decomposed vegetable matter, or of decomposed manure,



Sand is loose and dry. Greatly in need of manure, humus, etc., to give texture, when it is a most desirable soil for early and quick crops

all of which retard tendencies toward packing. A word of caution: do not work clay soils while they are very wet, because this will spoil the physical condition, the packing

NEVER before have business conditions been so disturbed as in the present year. Trained men have been withdrawn from every line to put the country on a war basis. And the seed trade has been no exception to the rule, hence we urge our customers to send in their orders at once, before the Spring rush begins. It will be a vast help to us in doing our part in feeding the country to be able to execute orders in February that in ordinary times come to us in March and April. So, whether you buy from us or any other seed house, send in your order early.

Peter Henderson

"Better Gardens"

Make your garden a "better garden" this year—not only by better methods—but by planting seeds of known quality. The initial cost of the seeds is one of the smallest items in your garden but it is the most important and you cannot get the fullest results unless you have started right. Henderson's seeds are Tested Seeds. Our seventy-one years of seed raising, testing and selling has given us an unequalled experience that is back of every packet of seed we sell. Not only must your seeds be the best but your methods must be right. And to help in this we have prepared a booklet entitled "Better Gardens." This consists of extracts from the book "Garden Guide and Record," which we have published for a number of years for the use of our customers only. "Better Gardens" will be sent to all who send us ten cents for our special offer below.

"Everything for the Garden" is the title of our 1918 catalogue. It is really a book of 192 pages, with 16 colored plates and over 1000 halftones, all from actual photographs showing actual results without exaggeration. It is a library of everything worth while, either in farm, garden or home.



A Remarkable Offer of Henderson's Seed Specialties

To demonstrate the superiority of Henderson's Tested Seeds we have made up a Henderson Collection, consisting of one packet each of the following six great specialties:

Ponderosa Tomato
Big Boston Lettuce
White Tipped Scarlet Radish

Henderson's Invincible Asters
Henderson's Brilliant Mixture Poppies
Spencer Mammoth Waved Sweet Peas

To obtain the largest possible distribution for our annual catalogue, **"Everything for the Garden,"** we make the following unusual offer: Mail us 10c and we will send you the catalogue, booklet "Better Gardens," together with this remarkable "Henderson Specialty Collection," and complete cultural directions.

Every Empty Envelope Counts as

Cash This collection is enclosed in a coupon envelope which when emptied and returned, will be accepted as 25c cash payment on any order for seeds, plants or bulbs amounting to one dollar, or over. **Make this year a "Better Garden" year.**

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I enclose herewith 10c for which send catalogue and "Henderson's Specialty Collection," with complete cultural directions: also booklet "Better Gardens" as advertised in *The Garden*.



The delights of an "Old-Fashioned" Garden last from spring to fall

The owner of an "Old-Fashioned" garden of hardy perennials does not have to depend on one short period of bloom. With the first warm days of spring come the odd flowers of the Irises, closely followed by the dainty Columbines.

About Decoration Day and during early June the wonderful Peonies claim our admiration. The golden yellow flowers of Coreopsis next appear. Phlox, Larkspurs, and Day Lilies begin blooming now to stay with us until summer's end, when the Asters come to wind up the season's bloom.

You can easily have a garden of these old favorites if you have a copy of

STORRS & HARRISON CO. Seed and Plant Annual

to assist you in making selections. It tells the ultimate height of each plant so you can arrange your garden to get the greatest effect. It contains 192-pages of information about everything for garden, lawn, orchard and greenhouse grown by this 64-year-old concern. Send for a copy of the Annual.

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"PROGRESSIVE" best Fall-Bearer; also standard June sorts including our new seedling, "COLLINS." Raspberry, Blackberry, and Grape Plants in Assortment. *Catalogue Free.*

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Sowing for Summer Flowers

IN MANY California cities the space between the sidewalk and the curb is too narrow to be used for grass. An excellent way to treat this is to carpet it with one of the trailing flowering plants such as Verbena, Portulaca, and Abronia. If the border is four feet or wider, an attractive treatment is to use one color in the centre and another color on either side for edgings.

For example: Use the rose flowering Abronia for the centre and the white Verbena as the edging. Or use the white Verbena in the centre and the red Verbena as the edging. A third plan would be to use the yellow Portulaca for the centre and the pink Portulaca for the edging.

The average bed about an ordinary medium-sized home is rectangular. The following suggestions for planting lists, then, will be varied to meet your own conditions, mainly in the size of the bed. The names of varieties in each case are given in order of size. The first one mentioned is the tallest of the group.

For a house border use a blue Delphinium, a white Candytuft, a carmine Candytuft with a row of Coleus for the edging.

For a shrubbery border use a white Campanula, a semi-dwarf pink Snapdragon (space must be left for this now for the seeds must be sown in the hotbed and the plants transplanted when they are about six inches high), blue Forget-me-not, and white Sweet Alyssum.

For a driveway border use red Tritoma (Kniphofia), or yellow Golden Rod (Solidago canadensis), yellow Calendula, white Sweet William, and crimson Lantana.

For a screen use pink Hollyhocks, pink Balsam, blue Salvia, and white Lobelia.

For a bed in which a single variety is grown for its own beauty or for cutting, use Violets or Nasturtiums. Both may be grown in a rather shaded place. Seeds should be planted in February.

For filling in between shrubs, use Amaranthus, Cosmos, or Poppy (Papaver). The Cosmos is a rank grower and is not to be preferred in a position that is too prominent. The new varieties of Shirley and Oriental Poppies are especially desirable in prominent locations. The Shirley Poppies are to be had in the most delicate shades. The Oriental Poppy is a bright scarlet and should not be used too liberally. Its brightness has a use, however, for every planting should have something a little startling in it to add zest.

An unsightly fence or outbuilding may be made attractive by covering it with a Cypress Vine, one of the Morning Glories (Ipomoea), or with some of the vigorous growing Sweet Peas. If you planted Sweet Peas last October, you should have some blooming now, but it is worth while planting more for summer flowering. A good selection for February planting is: Blanche Ferry Spencer, a beautiful pink and white with wavy standards; Flora Norton Spencer, a beautiful blue; Frank Dolby, the largest of the lavender Sweet Peas; and Gladys Unwyn, a clear light pink.

Santa Rosa, Cal.

JOHN Y. BEATY.

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Anyone can grow Water Lilies, and a pool can easily be built by following simple directions. My 1918 Catalogue of Water Plants tells what materials to use, how to build pools of different sizes and shapes, and what Water Lilies and Water Plants to use for beauty and permanence. Ask for a copy.

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FOR THE SOUTH

THE method of making a hotbed is given in THE GARDEN MAGAZINE for February, 1915. After the seeds have germinated in the hotbeds be careful not to let the little plants damp off. This can be obviated by giving air every day in the middle of the day by lifting the sash a little. Water plants only in the morning and do so every day if the weather is mild. A little sulphur sprinkled between the seedlings is also a preventive of damping off and mildew.

Seeds to Be Sown

SOW in hotbeds the early tomatoes, such as Sparks' Earliana, Bonny Bess, and John Baer; the Chinese Giant peppers, the long red hot peppers, cayenne or tobasco, and the Red Cherry for pickles; Black Beauty egg-plant, to be transplanted later to the coldframes when they have two leaves. They will then make stocky plants before setting out in the open ground. A few canteloupe, cucumber, and squash seeds of the early varieties could be sowed in three inch pots and sunk into the earth of the hotbed. Later they can be set into the open ground without disturbing the soil about them and the little single glass frames placed over them and thus forced into maturity a week or two ahead of those that are sowed in the open ground in the spring.

Seeds of perennial flowers and a few annuals to get an early start should be sowed in the hotbed now and pricked out as soon as the plants have two leaves and transplanted three inches apart in coldframes, and in the spring be again transplanted to the flower border where they are to remain. Single Dahlias, Snapdragons, Delphiniums, Pyrethrums, Gaillardias, Platycodons, Chrysanthemums, Heliotropes, Hollyhocks, Stock, Wallflower, Sweet William, Nasturtium and numbers of others should get an early start in this way.

Thorough Preparation for the Garden Soil

WHEN the weather is open and the soil dry enough, spend most of the time this month in getting the land in first class condition rather than hurrying the seed into the ground. Plow the land deeply and follow in the furrows with a sub-soil plow so as to get all the potash available. Throw the furrows up high and let the soil get all the air and sun possible. Plow and cross-plow. In fact, do everything possible to get the land in excellent condition. Apply the compost heaps and well rotted manure. Acid phosphate should have been mixed in with the compost as it was made; but if not done then apply it now, broadcast about 500 pounds to the acre.

The success of raising vegetables depends greatly on their being brought to maturity quickly. This is done first by getting the ground in good shape, the soil thoroughly pulverized and manure and mineral fertilizers thoroughly incorporated. At this time of the year nitrate of soda should not be applied, in fact, only when vegetables are to be rapidly forced. In the early spring an application on cabbages and lettuce would be advisable, and in March when the asparagus bed is worked

(Continued on page 36)

War Conditions

Make Early Ordering Imperative

LATE ordering means not only late arrival of your order in America; but more unfortunate still, we may not be able to fill your request for some things at all.

This is because of the limited supply, and the unprecedented demand, caused by the War. With vegetable seeds, this is particularly so.

Once again, then, let us urge your ordering early.

It is most reassuring to know that not a single American Shipment of our seeds was lost last year, because of the U-Boats.

Send 35c for Garden Catalogue. With \$5 purchase of seeds, the 35c will be promptly refunded.

Sutton's Sons

Royal Seed Establishment
Reading, England

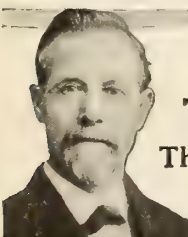
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Fairfax Roses will grow in YOUR garden

just as well as they do in ours. They are propagated under natural conditions—not forced in hot green-houses. They are hardy, vigorous plants that will thrive in all climates. They are all wintered out of doors and will bloom freely the first season. The great care we take in selection has enabled us to produce blooms of such extraordinary beauty that Fairfax Roses are celebrated amongst rose growers everywhere, and there is no reason why you should not be able to grow them just as well as we do. Send for a copy of my

1918 Rose Book — Free

It not only describes and illustrates the hundreds of beautiful hardy kinds of Fairfax Roses that will thrive in your garden, but it tells you how to grow roses with the greatest success. If you are having trouble with your roses, write me about it and I will gladly advise you what to do.

The beautiful Fairfax Killarney Rose shown here—an exquisite pink. Heavy 50c 2-year old plants

W. R. Gray

Box 6

OAKTON

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Big commercial orchardists and truck-gardeners use

DEMING SPRAYERS

in the power-driven types because they have proved to be sure profit producers. Wise home-gardeners use Deming bucket and knapsack sprayers because they are built with the same care, skill and experience.

Don't surrender your crop to bugs, worms and blight when a handy Deming Sprayer, a few cents' worth of spraying materials and a few hours' time will help insure a successful garden.

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THE DEMING COMPANY, 112 Depot St., Salem, Ohio

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The Significance of This "True Blue" Seal To Exacting Home Gardeners



SEEDS that come to you under the "True Blue" seal represent the highest standards in seed production. "True Blue" seeds will grow and yield the crop that you expect, provided, of course, soil and season are right. It costs much more to produce such seeds. But they are sold with the satisfaction that they are as reliable and dependable as human efforts can make seeds. In this sense the "True Blue" seal stands for crop insurance. The particular garden hobbyist will enjoy trying the following:

Livingston Specialties That Boost Garden Crops



Grown under our closest *personal* supervision, you will find these vegetable strains as nearly 100-point in quality, and as certain to yield bountiful crops as any obtainable.

Bean, Livingston's Hardy Wax. The most dependable, most prolific, round podded wax bean yet produced. Perfectly stringless, always. Pkt. 15c; ½ lb. 30c; lb. 50c; 2 lbs. 95c postpaid.

Beet, Crosby's Improved Egyptian. A particularly reliable strain of very uniform quality. Pkt. 5c; oz. 15c.

Corn, Livingston's Early Sugar. Large, ten to twelve rowed ears with pearly kernels of delicious flavor. Pkt. 10c; ½ lb. 20c; lb. 35c; 2 lbs. 60c postpaid.

Melon, Livingston's Ohio Sugar, as shown below, is one of the sweetest, large, green fleshed sorts obtainable. Does well everywhere. Pkt. 10c; oz. 20c.

Tomato, Livingston's Manyfold. The greatest new sort introduced since famous Livingston's Globe. Bright red, solid, early, most prolific. Pkt. 35c; ½ size pkt. 20c.

Scores of other record-yielders in pedigreed vegetables are listed in our free catalogue for which you should write **TO-DAY.**

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"Famous for Tomatoes"

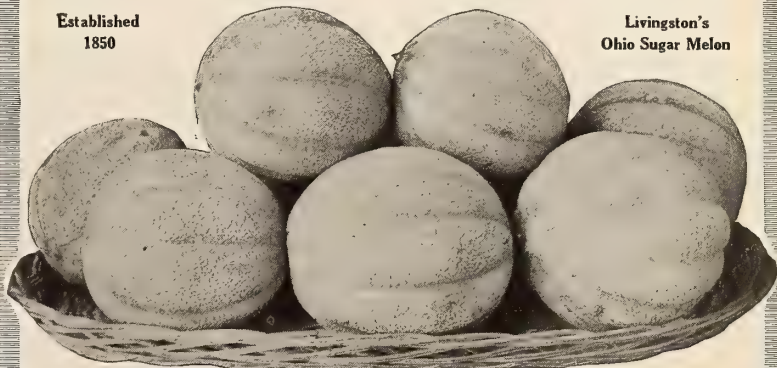
A Really Helpful Catalogue FREE

A well illustrated guide to the most dependable varieties of vegetable, flower and field seeds as well as flowering bulbs and garden accessories. Its cultural directions will help greatly to make your garden work successful. Its "true-to-nature" pictures will aid you in selecting the sorts that best serve your needs. Write for your free copy of this practical garden book **TO-DAY.**

THE LIVINGSTON SEED CO., 846 High Street, Columbus, Ohio

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Germany's Plots Exposed



JOHN R. RATHOM, the courageous editor of the Providence *Journal*, begins in the February *WORLD'S WORK* his great series on Germany's plots against America. The first article is "The German Spy System From the Inside." In their announcement the editors of the *WORLD'S WORK* say:

Mr. Rathom, in the series makes exposures of some of the German plots in America, of the systematic, secret war of the Kaiser on the American democracy, a war conceived in the cool calculations of peace, using diplomats, men of learning, professional men, and the leaders of our business life in an orderly plot to undermine our ideals, to control our commerce, and finally to conquer our nation by force of arms. The story Mr. Rathom has to tell has all the action and adventure of romance, but it has besides a message for the most serious contemplation of the American people—the message that this machinery of internal disruption is still in operation, that the agents of the Kaiser still ply their trade of death in the United States.

EX-AMBASSADOR HENRY MORGENTHAU will begin in the *WORLD'S WORK*, probably in the April number, the graphic story of

German Intrigues in the Near East

This series of articles will be written from his letters, diaries, etc., revealing the inner facts of the German activities in Constantinople, the key to their Berlin-Bagdad dream, and the crucial point in their attempt to gain world domination. The articles will picture the machinations of Baron Wangenheim, the German Ambassador, and the usurpations of the Young Turks, headed by Talaat and Enver Pashas.

The World's Work

on all stands, or clip and mail this coupon with one dollar to-day

Five Issues for One Dollar

The World's Work
Garden City, New York.

I enclose \$1.00 for five issues of the *WORLD'S WORK* beginning with

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G.M. 2-18

(Concluded from page 34)

over, a sprinkling of nitrate of soda the last week of the month after the other fertilizers are harrowed in will be most helpful. This, however, is almost impossible to procure now, but a manure barrel should be kept in a convenient and secluded place in the garden, and if the plants are watered bi-weekly with the liquid they will grow to maturity very rapidly.

Plant the smooth variety of English peas if weather is open and the ground is in good condition. Plant Irish potatoes with a complete fertilizer mixed well in the soil. Have the rows two feet apart and plant the potatoes fifteen inches apart in the rows. Do not cut the sets too closely. They should have two or three eyes left on each piece. A precaution against disease is to soak these sets for two hours in a solution of formalin before planting, one pint to thirty gallons of water, allowing them to dry before putting them in the ground.

In the open ground plant the Sweet Peas in trenches with well rotted manure in the bottom, and as the plants appear push the earth about them and thus the trench is gradually filled.

Fruit Trees, Shrubbery, etc.

TRIM back the grape vines to two good buds on each branch, cutting away all weak growth, especially near the base of the main vine. The clover which should have been sowed between the rows in the fall may now be plowed under and bone meal and acid phosphate applied and harrowed in. Fertilizers containing much nitrogen should be avoided as the vines will go to leaf. The necessary potash will be applied by deep plowing both in fall and spring.

Deciduous trees of all kinds should be set out before the sap rises the early part of this month, and also the stone fruits such as peaches, apricots and plums. Poplars and Beech are best planted in early spring and indeed all ornamental trees that have a pithy, soft wood.

Set out strawberry plants and work in a good fertilizer with the soil both for old and new beds. Place coarse straw or pine tags about the plants after working the ground, in order to keep the fruit clean. A good fertilizer for strawberries is a mixture of 250 pounds of acid phosphate to 100 pounds of nitrate of soda to the acre.

To Make Better Flowers

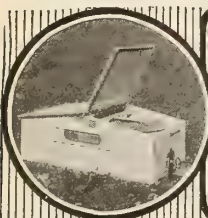
IF THE wood ashes and soot were saved as advised they may now be placed about the base of the Roses and worked lightly into the soil. Do not dig too close or too deep as it will loosen the roots.

After the soil in the flower borders has been worked over thoroughly to a pulverized condition, low growing annuals can be sowed for edging or under the Roses. Such are Mignonette, Sweet Alyssum, Dwarf Phlox, and Portulacca. Annual Poppies can be sowed now and the Oriental Poppies transplanted. Though both are best sown in the fall they can also be sown early in spring and it is not too late this month.

Look over the orchard and spray for scale if there is any evidence of it. Cut out all obstructing limbs and suckers at the base of trees. Look over the small fruits and cut out the old canes of the raspberry plants and the gooseberry and currant bushes. At end of the month spray with bordeaux mixture.

Virginia

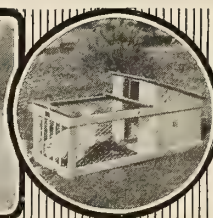
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ENTERPRISING HOME OWNERS WILL
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—Hugo Alfvén, the Swedish composer

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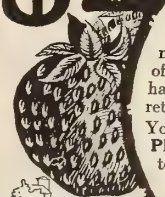
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Ask your hardware dealer for EXCELSIOR rust proof tree guards, trellises, bed guards, railings, gates, etc.

WRIGHT WIRE COMPANY, Worcester, Mass.

Garden Roses



MRS. JAS. LYNAS

A most valuable garden rose

Color; pearly pink at base of petal, flushed deeper shade at edges and on the reverse.

One of the best of over 125 varieties we catalogue for American Gardens. All are imported from Hugh Dickson, Ltd., Belfast, Ireland, and are strong, two year old, plants.

As Imported Rose plants will be limited

in America this season, we urge those who are contemplating Rose Gardens this spring to place their order at once.

We must have all orders on file by MARCH 15th, to guarantee delivery for spring planting.

Standard Varieties: 60c per plant; \$6.00 per dozen; \$40.00 per hundred.

Our 1918 Illustrated Catalogue, containing the finest list of

Roses and Chrysanthemums

in America, as well as

Hardy Perennial Plants

is now ready. If interested, write for a copy—if you have not already received one.

CHARLES H. TOTTY CO.
MADISON NEW JERSEY

War Garden Experiences and Wisdom

THE Cleveland (Ohio) Garden Club's War Garden for 1917 struggled against fearful odds and needless to say no bumper crops were raised but much valuable information was stored away for future use and a certain amount of foodstuffs was marketed. A late start, a lack of practical knowledge of farming on the part of most of the promoters, torrential rains up to July, and a cold, dark and frosty September and October, were a few of the handicaps.

The first unpleasant fact forced on our notice was that if any one had a good piece of ground he worked it himself. We went over the county with a fine tooth comb and the acreage offered free would scarcely raise weeds, according to the city expert who accompanied us. In desperation we rented a farm of twenty-four acres at a cost of \$200.00 for the season, hired a farmer and helper, and put in potatoes, navy beans, field corn, tomatoes and cabbages, whenever it stopped raining long enough to plant. The high price of seed potatoes and beans is an old story but a very sad one.

The farmer was of the home grown variety and the bright spot of the whole adventure. He never planned to do anything, he always "calculated," and when it came time to dig the potatoes and he was asked how long it would take he "thought it would ruin the better part of two days." He was an excellent worker and understood his business, so we cannot attribute our failures to him.

We acquired the following expensive information:

1. The soil was thin and we should not have tried to plant potatoes in freshly turned sod.

2. Some of our seed potatoes were bought in Michigan because they cost less, but they were no good and developed blight during the summer, emphasizing the fact that it never pays to buy cheap seed.

3. The potatoes should have been sprayed before the bugs arrived as well as afterward.

4. The land badly needed draining and a great deal of fertilizer.

5. The difficulty and expense of marketing produce twenty miles from town is not appreciated by the novice.

6. The high price of labor in Ohio makes farming a losing game unless the farmer and his relations do the major part of the work.

We sold altogether one hundred and twenty-one bushels of good sized potatoes at \$1.80 a bushel, fifty bushels of culls (and they were culls), at \$10.00 for the lot, two hundred and seventy-five bushels of tomatoes at approximately \$1.50 a bushel, the corn crop for \$150.00, and all the cabbages to a sauerkraut factory for \$10.00.

Hush! Do not speak of the navy beans, commonly referred to as "the bean." It strongly reminds us of that moving poem about "Little Orphant Annie," who "When they turned the kivers down She wasn't there at all."

KATE B. BURTON.

Practical Plans at Islip—The successful efforts at Islip N. Y., last year (as told already in THE GARDEN MAGAZINE) lend interest to the proposed plan of operations for 1918. The Committee's report is in part:

"The Committee recommends two large pieces of ground of substantial acreage be secured for garden purposes, said ground to

be under the direct supervision of the Club or special Committee appointed for this purpose.

It is the idea of the Committee that all labor in connection with this garden movement be volunteered and that the crops be divided equally among the participants. As several members have volunteered to raise additional plants of cabbage, tomato, etc., this will save others the tedious task of raising their own seedlings.

Only crops of winter food value or such crops as may be used as a filler in connection with same are to be considered for the war garden and the following selections have been made by the Committee:

Shell Beans,	may be preceded by String Beans or Peas.
Beets	" " " " " " " " " "
Cabbage (late)	" " " " " " " " " "
Carrots	" " " " " " " " " "
Rutabaga	" " " " " " " " " "
Onion	" " followed by Rutabaga, Beets or Carrots
Field Corn,	A few Pumpkins may be sown in hills
Parsnips	For canning
Tomato	For canning
Potato	Early Potatoes may be followed by Beans.

It is the sense of the Committee that the average home garden contains too large a variety for practical purposes.

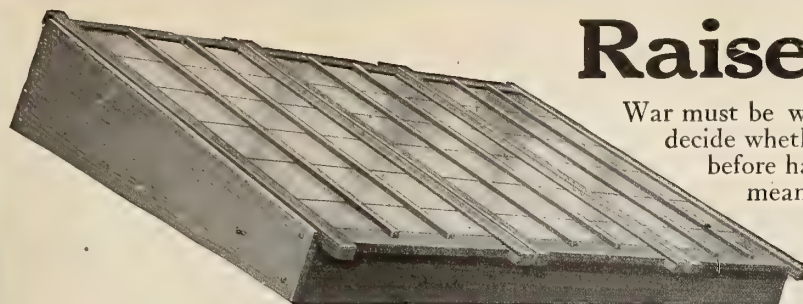
The Committee feels that while last year's Children's Gardens were very praiseworthy, the effort was of little economic value and makes the suggestion that suitable tracts of ground be secured close to the schools and that the Garden Club or special Committee cooperate in an advisory capacity, crops of winter food value being grown exclusively.

Meetings and Lectures in February

(Following dates are meetings unless otherwise specified)

1. Pasadena, Cal., Horticultural Society.
2. Lake Geneva, Wisc., Gardeners' & Foremen's Assn. Massachusetts Horticultural Society, Horticultural Hall, Boston. Lecture: New Horticultural Crops for Our Food Supply. U. P. Hedrick.
4. Larchmont, N. Y., Garden Club: Meeting and Lecture. New Bedford, Mass., Horticultural Society.
5. Maryland Garden Clubs of America, Maryland Council of Defence, Women's Section, Arundell Club Hall, Baltimore, Md. Lecture: The Control of Plant Diseases Affecting Garden Crops. Garden Club of Pleasantville, N. Y.
7. Marshfield, Mass., Garden Club.
8. Westchester, N. Y., and Fairfield, Conn., H. S. Connecticut Horticultural Society, Hartford, Conn.
9. Dobbs Ferry, N. Y., Horticultural Society. Massachusetts Horticultural Society, Horticultural Hall, Boston. Lecture: America's Horticultural Future. W. A. Manda.
11. New York Florists' Club, Grand Opera House. Garden Club of New Rochelle, N. Y. Rochester, N. Y., Florists' Association.
13. Valdosta, Ga., Floral Club. Short Hills, N. J., Garden Club. Nassau Co., Horticultural Society, Glen Cove, L. I. Lenox, Mass., Horticultural Society.
15. Dahlia Soc. of California, Palace Hotel, San Francisco. Pasadena, Cal., Horticultural Society.
16. Lake Geneva, Wisc., Gardeners' & Foremen's Assn. Massachusetts Horticultural Society, Horticultural Hall, Boston. Lecture: The Peony (Illustrated). B. H. Farr.
19. Gardeners' & Florists' Club of Boston, Horticultural Hall, Boston. Maryland Garden Clubs of America, Maryland Council of Defence, Women's Section, Arundell Club Hall, Baltimore, Md. Lecture: Home Fruit Growing.
20. Rhode Island Horticultural Society, Providence. Tarrytown, N. Y., Horticultural Society.
21. Salisbury, Conn., Garden Club. Subject: Special-purpose Flowers and Plants. Marshfield, Mass., Garden Club.
22. Connecticut Horticultural Society, Hartford.
23. Dobbs Ferry, N. Y., Horticultural Society. Massachusetts Horticultural Society, Horticultural Hall, Boston. Lecture: The Diseases of Roses. (illustrated). L. M. Massey.
28. School Garden Ass'n. of America, Atlantic City, N. J.

Efficiency in Gardening.—I wish to thank you for the article in January by Grace Tabor on "Making the Smallest Quantity Reach the Farthest." My only regret is that the article is so short. It has a great deal in common with the proverbial buckwheat cakes: It tastes like more.—Fred. L. Merritt.



Raise Food This Year

War must be won by food, says Hoover—and he knows! The garden must decide whether we live well or scantily—regardless of our money. Never before has America faced a food shortage. Never before has the garden meant so much. It is the time to add greatly to its products with

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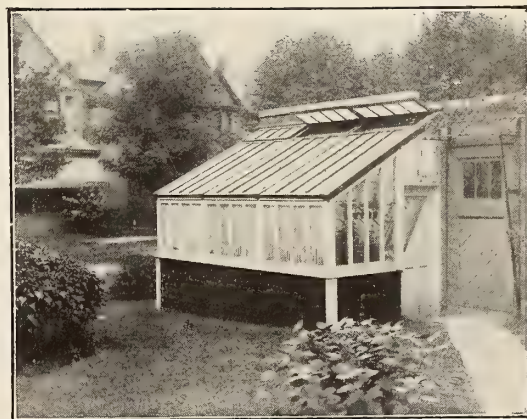
They double the growing season, for they defy frost. They start the garden months earlier and prolong its life weeks and weeks—even all winter. They insure a big yield—make two crops grow where one grew before. They mean more food—and “food will win the war.”

Callahan Sectional Greenhouses

As useful as they are ornamental, increasing garden usefulness, supplying your table all winter, starting plants for summer—a profitable addition to any home.

Made in any size and many styles—from the largest plant for practical greenhouse men to the small lean-to for the home. All are made in perfect fitting sections, easily erected by any handy man, and may be enlarged or moved. Single or duo-glazed. Best construction; selected Louisiana Red Cypress.

Write for the catalogue on greenhouses.



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Callahan Duo-Glazed Sash is a real answer to the demand for food—and more food—for with it you can add largely to your garden's product—and enjoy fresh vegetables all year.

Prices are at rock bottom—lower we fear than we can maintain them, with lumber scarcity and advancing costs. Railroad shipments, too, are slow. So act now. Write for our catalogue, with much valuable garden information—and get your orders in at once!

Callahan Duo-Glazed Sash Co. 132 FOURTH ST. DAYTON, OHIO



Your Own Lawn and Your Neighbor's

Both alike when made—but not alike last summer. One was thin, weedy, and yellow, the other thick and green. *Proper fertilizing made the difference.*

While this seems a simple fact, many fail to realize that no living thing, plant or animal, can exist, far less grow without food. Why expect your lawn to be vigorous and strong enough in its growth to keep out weeds, if you starve it?

A good lawn is a veritable mat of millions of grass plants which draw heavily on the fertilizing elements in the soil. No crop is in greater need of adequate fertilization.

Takoma Odorless Lawn Plant Food

a concentrated, quickly available fertilizer, applied about the season of April showers, will work wonders—and sustain the lawn in good shape throughout the year. It is absolutely odorless and more economical than other materials recommended for lawn grass, a little being sufficient for a large area.

Send for our booklet “The Maintenance of Lawns and Golf Courses,” which covers this subject thoroughly.

Odorless Plant Food Co., 1317-19 New York Ave., Washington, D. C.

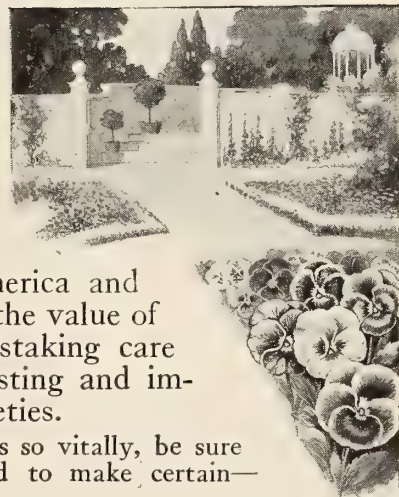
YOUR garden can be no better than the seed you use. **Carters Tested Seeds** cost no more than ordinary seeds, yet their wonderful records both in America and Great Britain show the value of generations of painstaking care used in selecting, testing and improving Carter varieties.

When production counts so vitally, be sure your seed is right and to make certain—purchase tested seeds.

Sent free on request, Carters 1918 Catalogue “Garden and Lawn.” Profusely illustrated with color pages.

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Stark City Roots mean Quality Fruits

Are you planning to plant fruit?

To you who realize the importance of fruit as a food, and the deliciousness of home-raised fruits, we offer these two big helps: FREE.

"**Inside Facts of Profitable Fruit Growing**"—a complete authoritative guide on every phase of fruit growing, 80 pages, many illustrations and diagrams; no advertising. Tells how to plant, prune, spray; how to grow strawberries and other fruits. "Intensely valuable to fruit growers," says Dr. J. C. Whitten, Prof. of Horticulture, University of Mo.

"**How to Beautify Your Home Grounds**"—a 50-page illustrated booklet which enables even the novice to make the home place more attractive and valuable at little expense. Tells what, when, where, and how to plant ornamentals; how to prune and care for shrubs, roses, etc. "I have received more expensive books, yet none in which the subject is treated more interestingly and practically." W. S. Forbes, Winchester, Mass.

Our new 64-page Catalogue, profusely illustrated, gives descriptions and prices of choice fruits and ornamentals, tables of ripening dates, planting distances, varieties suited to your section, etc.

Three Free Books—any one or all of them sent FREE, if you'll mail the coupon or mention this ad when you write: We usually charge for the instruction books, except to customers: Now is the time to plan for spring planting—let us help you. We have no agents, but sell direct from nursery only: Write.

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STARK CITY, MISSOURI

Please send books as checked:

"Inside Facts" ☐

"How to Beautify" ☐

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I am interested in Fruits ☐

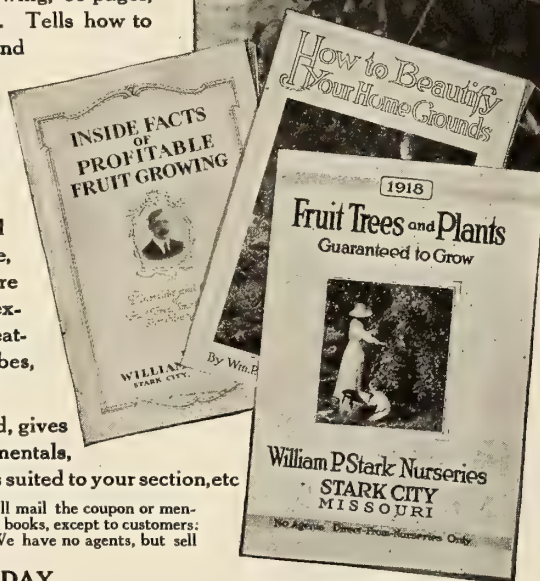
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Address and name both the same.



Everbearing Strawberries for the First Fruitless Summer

THE first summer of Cityman on the farm or in the suburbs is frequently a fruitless one even if the farm and garden yield bountifully, for he generally finds no fruit on the place but an old gnarled apple tree or two, and a blighted pear tree. And to the trials and disappointments of that first critical year is added the blighted vision of luscious fruit which his fancy had painted as one of the joys of country life. It is in this connection that the everbearing strawberry has its greatest value. Fortified with a hundred or more plants, Cityman may move out into the country and continue dreaming of home-grown short cake; for his dreams will be realized the first summer. Planted in the spring, even though there be no other fruit on the place, the first summer will not be fruitless.

In the spring of 1916 we moved to the suburbs. This was a return to the country after an absence of fifteen years, during which time we had forgotten all the attractions of the country but not that of strawberry shortcake made from berries picked when ripe. Lack of fruit on our suburban plot prompted us to try the everbearing strawberries as an experiment, for which purpose we bought twenty-five plants of each of the three varieties, Progressive, Superb and Americus. They were received by mail on the fourth of April, but a snowstorm that week prevented us from planting them out until the nineteenth. We heeled the plants into the ground in an old chicken-house and they kept very well until planted out. We planted them in three rows spaced three feet apart, putting the plants two feet apart in the row. The blossoms were kept pinched off till June, when a light dressing of nitrate of soda and acid phosphate was given the plants. Our first ripe strawberries came before the middle of July, and twice a week thereafter we picked, on the average, slightly less than a quart at each picking. This continued until October when the quantity began decreasing; but there were some ripe berries picked as late as the first of November.

The experiment was voted a decided success; but we were not equally satisfied with the three varieties, for the bearing was done almost wholly by the Progressives. To be sure, the few berries the Superbs bore were superb, but the berries were so few. However, we felt we had not given them a square deal, for in our greed to increase the number of plants, we allowed all three varieties to runner without restraint. All three varieties produced large numbers of runners, but the Superbs acted as though runnering was all there was to strawberry life, so that at last we were compelled to force them to practise birth-control. The Americus was a complete disappointment—they bore few berries, and those few small and ill-formed.

We decided to give the Superbs another trial. So, when we moved on a farm last November, we took from our strawberry bed 400 Progressives, 100 Superbs, but none of the Americus. The plants were heeled in the open ground, where they kept well during the winter, and in April we set them out in rows spaced three feet apart, putting the plants fifteen inches apart in the row. A placard was then put on a stake with the following notice: "runners are not permitted in this strawberry bed." And

(Continued on page 42)



THE policy of the Bay State Nurseries has never changed. After a quarter of a century of experience we believe in it more than ever. It is simply this: Give Value for Value. We can do this because we spend very little money on the selling end of our business but we spend liberally in growing and handling all our products. We have nearly 500 acres of ornamental nursery stock, but we employ no salesmen and spend but little in printers' ink. Don't look for any large display of advertising from us. Our money goes into the growing of our stock and we expect, as in the past, that our stock will sell our stock. Pleased customers are among our most valuable assets. Our 1918 catalogue is for the asking. Get one and send us a trial order. We will guarantee you satisfaction.

THE BAY STATE NURSERIES, 678 Adams Street, North Abington, Mass.

Dreer's "Incomparable"

Orchid Flowered

Sweet Peas

We have selected out of hundreds of varieties the following twelve "Incomparable" sorts, each one a leader in its respective color, and sure to give entire satisfaction:

Blanche Ferry Spencer—Pink and white

Countess Spencer—Lovely rose-pink

Dobbie's Cream—Primrose-yellow

Elfrida Pearson—Finest light pink

Florence Nightingale—Clear Lavender

King White—Pure white

Margaret Atlee—Finest rich deep pink

Mrs. Hugh Dickson—Salmony pink

Royal Purple—Rich royal purple

Scarlet Emperor—Deep scarlet

Thos. Stevenson—Orange scarlet

Wedgwood—Silvery blue

Collection containing a liberal packet each of the twelve "Incomparable" sorts for 85 cts., or one ounce of each for \$3.50 postpaid.

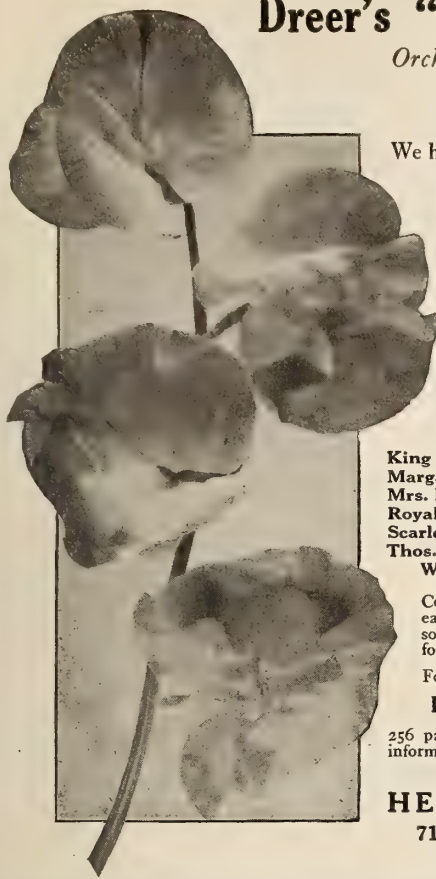
For complete list and cultural notes see

Dreer's Garden Book for 1918

256 pages brimful of valuable gardening information—*Mailed free on request if you mention this magazine*

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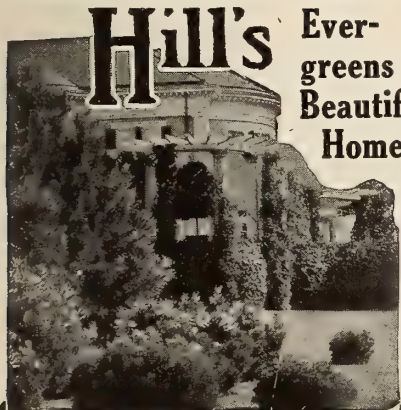
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enable you to make any size yard or runway desired. Can be moved to other locations at will. Prices as follows:

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2 ft. 6 in. long x 5 ft. (Gate)	1.60 "	6 ft. long x 2 ft. high	1.60 "

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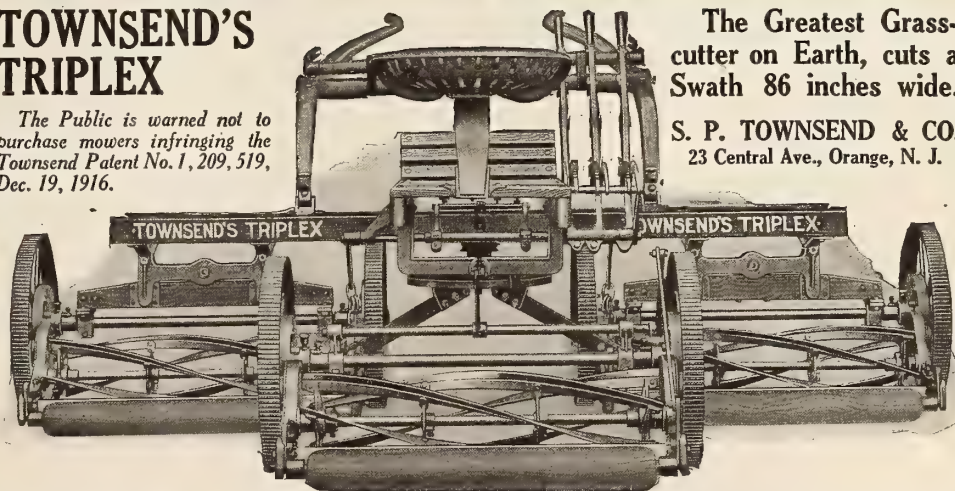
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The Greatest Grass-cutter on Earth, cuts a Swath 86 inches wide.

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Drawn by one horse and operated by one man, the TRIPLEX MOWER will mow more lawn in a day than the best motor mower ever made, cut it better and at a fraction of the cost.

Drawn by one horse and operated by one man, it will mow more lawn in a day than any three ordinary horsedrawn mowers with three horses and three men.

Floats over the uneven ground as a ship rides the waves. One mower may be climbing a knoll, the second skimming a level and the third paring a hollow. Does not smash the grass to earth and plaster it in the mud in springtime nor crush out its life between hot rollers and hard hot ground in summer as does the motor mower.

Send for Catalogue illustrating all types of TOWNSEND MOWERS

Learn Paragon Shorthand in 7 Days

MAKE it a point of pride to learn ONE sure means of self support—Shorthand.

Save others from worry. If you are ever thrown on your own resources—Be Independent.

Our Government and the whole business world constantly call for trained shorthand writers.

Even if you never expect to be obliged to work, here is an invaluable aid to quick, clean-cut precision in transacting business—your own, or anybody else's.

You are asked to memorize only as much as you can easily learn in 7 lessons, because the entire system consists of

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THAT IS ALL. The simple explanations and exercises are divided into seven lessons, each of which you can grasp in one evening. Speed will develop pleasantly as you make daily use of your quickly acquired knowledge.

See for yourself how perfectly simple it is. Stop right here and study the specimen lesson at the right.

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Thousands of young, ambitious men and women who have a desire to be practical and who have failed to learn the old, complicated forms of shorthand have learned Paragon with ease. They have since become court stenographers, reporters, assistants to business heads and in many cases executives of prominent concerns. Grateful letters in our files attest these facts.

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You must learn shorthand to do yourself justice and compete with others—as a busy executive, or as a beginner in business.

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FIVE

DOLLARS enclosed for which send complete Paragon Shorthand Course, postage prepaid. If not satisfied will return it in 3 days and get my money back without question.

Address.....Garden Mag. 2-18

Name.....
Business.....

If a problem grows in your garden write to the Readers' Service for assistance

(Concluded from page 40)

Mrs. Farmer took it upon herself to see that the injunction was carried out. The blossoms were kept pinched off till June when a dressing of acid phosphate and chicken manure was given the plants, and in July we began to pick berries. This time the Superbs did better; but keeping the runners cut off helped the Progressives also, so that this year too, the Progressives proved to be the better berry.

All in all we liked our everbearing strawberries even better this year. Shortcake—with real whipped cream—any time Mrs. Farmer felt that the rewards for the farmer's life should not be left to a future existence; canning and jamming and preserving strawberries throughout the whole summer, thus avoiding the usual rush; and whenever we drove into town we had no difficulty in disposing of several quarts at fair prices. Then too, when a tool was to be borrowed from a neighbor, a quart or two of fresh ripe strawberries in August sent along with the request always brought the desired tool back.

From our experience with them, we should advise planting 100 or more of the Progressives and not bother with the Superb or the Americus. The Progressive may now be had at reasonable prices from most of the reliable small-fruit nurseries, and there is no need of paying the fancy price of a dollar a dozen or anything like that price, especially if gotten in lots of a hundred or more. The plants need no coddling: plant them into fertile soil, keep the weeds down, and don't let them runner the first year. However, human nature being what it is, if you can't resist the temptation for more plants, it will be far better to let ten or twenty plants runner to furnish the plants, and the others be kept free of runners to furnish the berries.

Maryland.

H. A. M.

A Yellow Garden

I LOVE yellow flowers, they are so cheerful," said a friend the other day. Nature seems to love them, too, and is lavish with her yellow blossoms, beginning with the Dandelion that stars the lawns almost before the snow is gone. There is but little time all summer when one cannot find wild flowers in yellow; and when the sun turns toward the south, all the accumulated sunshine of the long days bursts forth in a profusion of yellow that seems to compensate in some degree for the diminishing daylight. The "57 varieties" (more or less) of Golden Rod, mingled with Spanish Needle, Rudbeckia, and Sunflowers, make gorgeous the woods and wayside against the brown of grass and leaf.

It is quite possible to have a succession of yellow flowers in one's own garden, also, to "make a sunshine in a shady place" all the time from early March to Thanksgiving. The earliest, of course, are the Crocuses, the Mammoth Yellow that in sunny corners have been known to bloom in February. In our bed, one pushed up to see the sun on February 28th, but the sun hid behind a cloud and the Crocus did not open. Snow came and stayed on the ground ten days, the yellow of the bud showing above the snow. On March 11th that bud opened wide, as fresh as if just out of the ground, and was followed by twenty-five blossoms the next day. Often two hundred or more are open each day, making the bed a bit of glory in the fresh green of the lawn.

Before the Crocuses are gone, Daffodils

(Continued on page 44)



MANY
WILL BE
SCARCE
ORDER
EARLY

THOUSANDS of successful 1917 garden-beginners are to-day praising Vaughan's Seeds. Ten thousand City and National Gardens, successful with our seeds, already plan with enthusiasm their next year's garden—bigger and better; we can help.

For Over Forty Years
 we have gathered from the ends of the earth the **Vegetables of quality and Flowers that bloom**, and by our tests and trials we know and offer only such as will give results.

The available garden seed supply is the shortest ever known. Plan carefully and it will be safest to ORDER EARLY.

Those planting in quantity, scarce seeds such as Onion, Cabbage, Beans, Peas, Pepper, Sweet Corn and Tomato. **WRITE NOW** for prices.

1918 War Garden Collections
 (Include Garden Booklet Free)

No. 1 Complete assortment of Vegetables for 25 ft. garden, prepaid **\$1.00**
No. 2 Complete assortment of Vegetables for 50 ft. garden, prepaid **\$1.50**

Begin your 1918 garden—order one of the above.

Vaughan's Catalogue "Gardening Illustrated" goes with either, or by mail **FREE**, 160 big pages with colored plates. 30 Greenhouses, 120 acres Nursery.

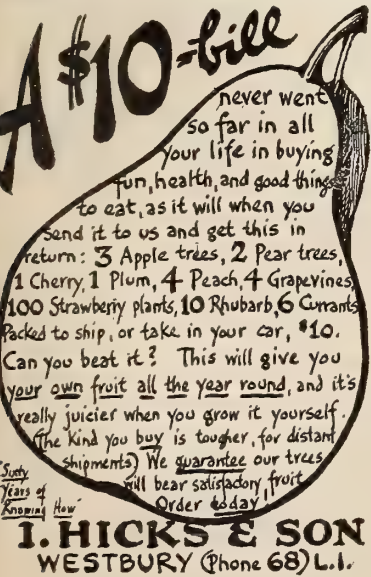
VAUGHAN'S SEED STORE
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MR. ROBERT PYLE—the well-known Garden Lecturer and Rosarian invites correspondence from garden lovers and societies. Subject—"The American Rose Garden" illustrated with finely colored lantern slides. Address: West Grove, Pa.

A LAWN EXPERT
 will answer your lawn questions and advise how to get the best lawns through the Readers' Service.

A \$10-bill

never went so far in all your life in buying fun, health, and good things to eat, as it will when you send it to us and get this in return: 3 Apple trees, 2 Pear trees, 1 Cherry, 1 Plum, 4 Peach, 4 Grapevines, 100 Strawberry plants, 10 Rhubarb, 6 Currants. Packed to ship, or take in your car, \$10. Can you beat it? This will give you your own fruit all the year round, and it's really juicier when you grow it yourself. (The kind you buy is tougher, for distant shipments) We guarantee our trees will bear satisfactory fruit. Order today!!



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 WESTBURY (Phone 68) L.I.



Your War Garden

How to Make It Help Hoover Earlier in 1918

GIVE it a *running-start* via cold frames—that's how.

Don't be content to wait on a lagging Spring. Meet it half-way—or *more* than half way. Set out your seedlings in cold frames during February and early March. Give them a chance to grow into strong, sturdy plants, while your "open air" garden is still tied up tight in frost knots.

Then when gentle Spring finally does deign to visit us "for keeps," you can transplant your *well-established plants* in your garden, while your neighbor is just setting out his *seedlings*. You will have a running-start on him, of from six weeks to two months.

You will not only have *earlier* vegetables—you will have more vegetables, better vegetables.

Send for our Booklet Number 215. It tells of the Pleasures and Profits of Cold Frames. Gives you a line on their possibilities. Is, in fact, a regular cold-frame manual.

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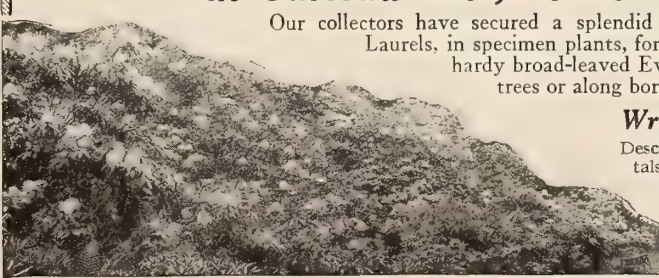
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THE BALL MFG. CO.,

Dept. E, Glenside, Pa.

(Concluded from page 42)

and Jonquils, Campernelles and Tulips are out. A Crocus lasts but two days on the bulb and not that if picked, but these others are all pickable and lasting. The most satisfactory are the Campernelles; small Jonquils, very fragrant, which often keep fresh two weeks on the bulb and nearly as long in a vase. Successive flower stalks keep them in bloom almost two months. The others are more showy and better known.

The Iris provides several shades of yellow, cream, clear yellow, and yellow with brown trimmings. They last till June, and before they are gone the early shrubs have taken their turn and the perennials are ready to begin. The earliest shrubs are the Forsythia, which blooms before its leaves appear, and the spicy Missouri Currant, a favorite in old New England gardens. And those who formerly lived in New England "love it because it smells like home." Many people value this shrub for its big black currants which make fine jelly or spiced currants. A little later than these is the hardy Azalea, a dwarf plant, which in yellow is a bunch of beauty.

April and early May should see the planting of the annual seeds, Zinnias—lemon and golden yellow—Nasturtiums and Marigolds. Not that these exhaust the list, but they are the surest and most satisfactory, delighting in dry and hot weather as well as in the rainy season, and keep a succession of flowers till frost. Coreopsis, like these, is started from seed, but once started, sows itself till it may become a burden, after a few years. Golden Glow multiplies rapidly and one who has a root is usually glad to dispose of part of it. These furnish bouquets when other flowers are not so plentiful. If one has a vegetable garden, plenty of yellow blossoms can be had from the squashes, melons, cucumbers, and mustard.

Yellow Dahlias, both single and double, are constantly improving in size and number of flowers. Lantana, too, is better than it used to be, and has two shades in yellow, the clear lemon yellow and golden yellow, turning to red as it fades. But when these and all others are nearing the end of their beauty because of cooler weather, Chrysanthemums are just beginning. The "button" mums are as much a delight as the ordinary size and both will grow in the garden when the huge hot house beauty is beyond the reach of most of us.

The cost of a yellow garden is comparatively small. A quarter will give Crocus bulbs enough to start a bed, and another quarter will provide some Campernelles; these should be put in the ground in the fall, just before settled cold weather. A third quarter in the spring will buy seeds of two kinds of Marigolds, two shades of Zinnia, and Nasturtiums. Twenty-five cents more would supply two or more Chrysanthemums, and the succession of yellow flowers is practically complete. Others can be added as one has space to fill and money to spare or finds a friend with some to give away. The care of the yellow garden is so small, one feels it is an inducement to try it. Of the spring bulbs, only the Tulips need to be changed and that only every other year. The annuals are sown where wanted and the mums and shrubs also are fixtures. Dahlias and Lantanas should be kept in the cellar over winter. But the pleasure would repay much greater efforts.

Kansas.

M. C. K.



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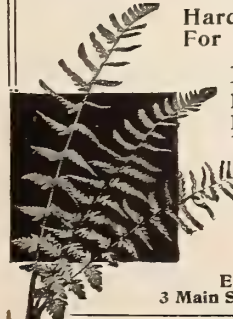
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The New Japanese Artichokes

SEEDSMEN report that there has been an unusual demand for Jerusalem artichokes since the home garden movement has gained in impetus by the war. More people use these artichokes for food than might commonly be supposed, and not a few are sold in the city market.

A new kind of artichoke from Japan has now come into the market, and seems to be far superior to the old-fashioned sort. It is commonly called simply Japanese artichoke, although its botanical name is *Helianthus Sieboldi*. Although belonging to the same family, this vegetable greatly differs from the common Jerusalem artichoke. The plants grow only about two feet high, and the tubers are small, hardly more than an inch long. An immense number of these tubers are attached to the root of each plant, and may be pulled up with the stalk. They are pure white, and look very attractive after the earth has been removed. They contain more juice than the Jerusalem artichoke, and may be cooked in various ways, being steamed or boiled, and served with melted butter.

There is no reason why they should not become a common vegetable in American gardens, for they can be grown with the greatest ease in almost any soil. There is some danger, of course, of their becoming a weed, because tubers which are left in the ground sprout the second year. The careful gardener, however, may prevent any trouble from this source by pulling up such undesirable plants as may appear in the spring. The tubers should be planted about three inches under ground, and about a foot apart. It has been found that hilling up slightly is an advantage, as some of the tubers grow near the surface. Like the Jerusalem artichokes, the Japanese artichokes wither quickly after being exposed to the air. If they are to be dug for winter use, they should be stored in damp sand in the cellar, or better still in a pit out-of-doors. Another good plan is to cover the bed where they have been growing with boards, over which leaves or other litter can be spread, so that the ground will freeze only lightly. Then the tubers can be dug at any time during the winter when the ground is not covered with snow.

Another kind of artichoke, sold under the name of *Helianthus* is somewhat larger, but not so large as the Jerusalem artichoke, and has a red skin. It makes a good vegetable, and has the characteristics of the Jerusalem artichoke in several ways. The plants are tall, and have an attractive yellow flower, so that this plant is decorative as well as useful.

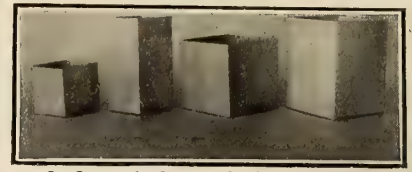
E. I. FARRINGTON.

Different Varieties of Beans

THE season of 1917, famous for the Declaration of Food Gardens before it was famous for the Declaration of War, has introduced many beginners to growing crops; it has also introduced many queer crops to seasoned gardeners. "Emergency" seed has done some mad, some maddening, and some delightful things on our hands this year.

I bought shell beans of a pole sort, an approved variety, name no matter because they all rotted in a swimming May, and for their sakes set up poles. Not to have my labor of pole setting wasted, I planted down, between showers, the only beans I had, one

(Continued on page 48)



2x2 4x2 3x3 4x3

Make Every Seed Count!

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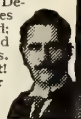
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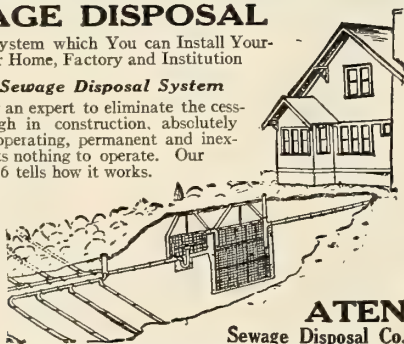
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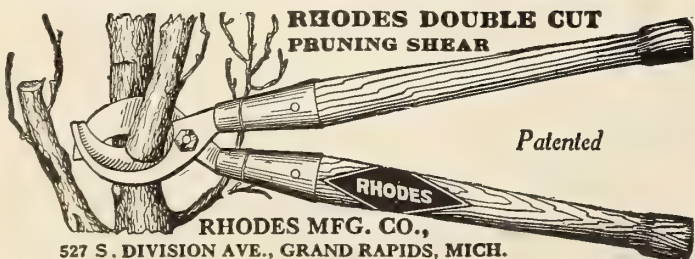


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(Concluded from page 40)

June day. They were a baking sort of white bean, larger than common, blunt ended; I got them by the pound at a chain-of-stores grocery, and the family had eaten most of them before I mobilized them as seed. They germinated 100 per cent.; then the cut worms took a third of them. I planted again from the current food-stock, a large old-rose sort of cranberry bean. (This latter variety is much grown by Sicilians here in this coalfield, used green for summer, and also dried; they cook it with macaroni and a dash of cheese.)

The cranberry variety has done well, and I am canning the young shelled beans as I do limas. But the chain-store white beans are a valuable sort, unknown to anybody about here. They make pods of a golden white, ten or eleven inches long and almost an inch broad, set with six to nine beans, their pods of the appearance of best pie crust. As a string bean they are enormously prolific, handsome, and would command double prices from epicures, as beside tender quality they have a butter-and-mushrooms flavor. Shelled young beans of this sort keep the mushroom flavor also. It seems a thoroughly distinct variety; three vines of it broke to green pods with an occasional yellow, probably from mixed ancestry. I am saving plenty of seed of the pure yellow plants, to grow another year. But can any reader of THE GARDEN MAGAZINE tell me what the bean is, and whether it comes from California, Mexico, or Japan?

Another visitor to our midst is the "butterbean," seed being furnished for it by a Dutchman. It is a pole bean of rather glossy foliage and conspicuous tufts of gay white and yellowish flowers, an enormous bearer, its beans are better than the Sieva limas though nearly like them in appearance when cooked. The catalogue name of this sort, if it has one, nobody knows here.

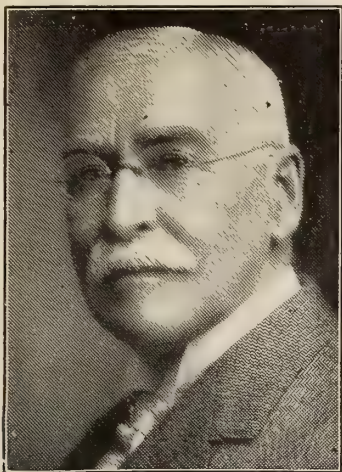
It is my guess that the very high prices of hitherto cheap foods forced merchants supplying industrial populations to rake and scrape the corners of the accessible world last year in their efforts to keep up stock of grades of food which they could sell at something like accustomed figures. Beans with a restricted local circulation were possibly in considerable stock here and there, and tons of them were picked up cheaper than grades and colors known to all grocers and all housewives and to army and navy contractors. Evidently they were not kiln dried; probably the trade did not consider them as "standard."

I foresee that I shall in 1918 plant a few specimens of every queer new bean that I buy for the pantry. I shall establish a Hagenbeck's Menagerie of beans from every quarter of the globe, for the pleasure of seeing what comes of what. Some of them may turn out valuable domestic animals, like the giant-podded pie-crust bean of this year's discovery.

Pittson, Pa.

E. S. JOHNSON.

—The chain store white bean (of which samples were sent) is the old Golden Cluster Wax. The occasional green pods are "rogues" and may be expected to occur in any neglected strain of Wax Beans, which is the reason why a gardener should buy seeds direct from a regular seedsmen and not from a hardware dealer, nor even from the corner grocery. Possibly the "butterbean" (no samples sent) is the old Challenger or Potato Lima.—Ed.



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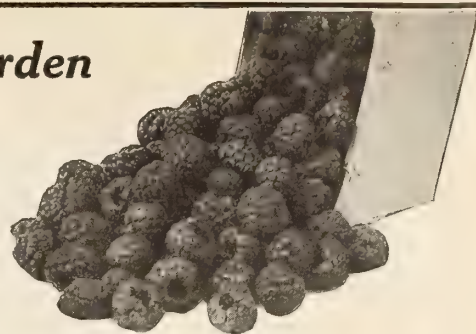
and see it grow to \$500!—and not only see it but enjoy it and eat it,—and still keep on having it—more and better every year! Your \$5 will buy:

2 Apple trees, 1 Pear, 1 Plum,
5 Grape Vines, 25 Raspberries,
5 Rhubarb, 5 Currants—and it won't be long before you get \$500 worth out of that!—Not to mention the fun of growing it all yourself! Quality and satisfactory growth absolutely guaranteed. Phone or mail your order at once, please.

I. HICKS & SON
Sixty Years of Knowing How
WESTBURY (Phone 68) L.I.

Now for a Patriotic Garden of Food Plants

Despite attempts at food control, prices will rise. Half the world has turned from work to war. Upon the other half falls the work of feeding all. Each month will witness an increased strain on our food resources. Stocks are depleted especially of canned goods, fruits, preserves. NOW is the time to set out plants that will boost next season's fruit supplies.



HALL'S PLANTS WILL BEAR FIRST YEAR

The following plants and roots are ideally adapted for home gardens, large or small. They will yield good crops in most any soil and are hardy in all climates. By planting our strong, transplanted 2 year old bushes this spring, a year's time is gained in getting crops.

Currants

White Grape (best white), Red Cross (sweetest red), Perfection (new red). Price extra strong, 2 year old plants, each 20c.; \$1.75 per dozen. Two each of the above 3 kinds \$1.00 postpaid.

Raspberries

St. Regis (new everbearing red), Early June (earliest red) shown above. Plum Farmer (new blackcap). Four each of the above 3 kinds for \$1.00 postpaid.

Grapes

Campbell's Early (new black), Green Mountain (earliest white), Lucile (splendid new red). Extra strong 2 year old vines, 25c. each, \$2.00 per 10; any 5 for \$1.00 postpaid.

Asparagus

Conover's Colossal or Palmetto, two standard quality-kinds, strong 2 year roots, \$1.00 per 100.

Rhubarb

New Champagne, each 25c.; \$2.00 per 10.

Vegetable Roots

SPECIAL OFFER: IF ORDERED BEFORE MARCH 15th

We will send prepaid the above 6 Currants, 12 Raspberries, 5 Grapes, 100 Asparagus, 5 Rhubarb, together with one dozen each of a splendid Blackberry and New Everbearing Strawberry, **152 Plants in all for \$5.00 Prepaid.** This is one of the most liberal offers we have ever made. **Send in your order to-day, don't delay.**

Write for *Free Catalogue* to learn all about the merits of the individual kinds, and which also describes our complete assortment of *Fruit, Nut and Ornamental Trees, Shrubs, Roses, etc.*

L. W. HALL COMPANY, Inc., 502 Cutler Building, Rochester, N. Y.

CHOICEST DAHLIAS FOR 1918

Visitors to our gardens last fall were amazed at the gorgeous blooms of the distinctive varieties we had on exhibition. We have a good supply of vigorous roots of the same stock to offer our patrons this spring.

Catalogue mailed on request

Somerhausen Dahlia Gardens, Chestnut Hill, Philadelphia, Pa.

Handy Box of Plant Labels

Assortment complete from 3 1/2 inch tag label, copper wired, to 10 inch garden label, 300 in all, with marking pencil; packed in a neat strong box for mailing. Needed in every garden. An appropriate present to a friend interested in gardening. Price \$1.20 postpaid. Beyond the fourth zone add fifteen cents.

W. H. BAYLES, Verona, New Jersey

Gladiolus

Blooms from June Until October

25 BULBS FOR 25 CENTS

"We make this offer to introduce our flower and garden seeds. One set to one person with a coupon enclosed good for 25 cents on the next order. This beautiful flower always blooms the first year. Bulbs grown on our northern farm bloom early, are hardy and produce bigger, brighter blossoms."

GARDEN CULTIVATION BOOK FREE!

Explains the cultivation of our big line of Northern-grown field, flower and garden seeds. Our peas, beans and potatoes insure big money-making crops. Used everywhere by professional growers. Write for our book to-day. **Lou S. Darling Seed Co., 121 Michigan Street, Petoskey, Michigan.**



A Garden Library for a Dollar and a Quarter

Bound volumes of **THE GARDEN MAGAZINE** represent the last word on gardening. It is really a loose leaf cyclopedia of horticulture. You are kept up to date. Save your copies of **THE GARDEN MAGAZINE** and let us bind them for you. There is a new volume every six months, and Vol. 24 is ready now. Send your magazines by Parcel Post and we will supply index, and bind them for you for \$1.25. If you have not kept all of the numbers, we will supply the missing copies at 25c each, or we will supply the bound volume complete for \$2.00. **THE GARDEN MAGAZINE** can be of more service this year than ever before, and you can get most out of the magazine when you bind it, and keep it in permanent form. Address:

Circulation Department

GARDEN MAGAZINE, Garden City, N. Y.

DINGEE ROSES

Sturdy as Oaks

Pot-grown rose bushes, on own roots, for everyone anywhere. Plant any time. Old favorites and new and rare sorts, the cream of the world's productions. "Dingee Roses" known as the best for 67 years. Safe delivery guaranteed anywhere in U. S. Write for a copy of

Our "New Guide to Rose Culture" for 1918. It's FREE

Illustrates wonderful "Dingee Roses" in natural colors. It's more than a catalog—it's the lifetime experience of the *Oldest and Leading Rose Growers in America*. A practical work on rose and flower culture for the amateur.

Describes over 1000 varieties of roses and other flowers and tells how to grow them. Edition limited.

Established 1850
70 Greenhouses

THE DINGEE & CONARD CO.

Box 237,
West Grove, Pa.



Gardeners

IT'S so easy to have a luxurious, thriving, healthy garden that no one should be satisfied with any other kind. One tool is all you need—a simple, well-balanced, easily operated

PULL-EASY

ADJUSTABLE

Garden Cultivator

Instantly adjusted to any width from 7 to 18 inches so you can cultivate the full width of any row, right up close to the plants without injuring them. Extended fully can be used as a rake, if desired. Middle tooth can be removed and two rows worked at once.

Most dealers sell the Pull-Easy. If your dealer hasn't it, write his name and your own on the margin of this ad, tear out and mail to us with \$1.50 in U.S. \$2.00 in Canada, and you will promptly receive your Pull-Easy by Parcel Post prepaid. Literature on request.

Adjusted for narrow rows



Full 18 inch width

Middle tooth out, working two rows at once

THE PULL-EASY MFG. CO.

301 Barstow Street

Waukesha, Wisconsin

DAHLIAS OF DISTINCTION

You want the new mammoth kinds that will win the prizes. I have lately originated over 200 gorgeous new dahlias which I am offering in my new catalogue. Stillman's dahlias are world known. Get a copy of my new descriptive catalogue and guide, free. Over 1400 kinds grown last season.

GEO. L. STILLMAN, Dahlia Specialist
Westerly, R. I. Box C-8

Remembering Our Native Nuts

WITHOUT declaring myself a vegetarian, I may say that nuts are the only genuine substitute for meat. Moreover, being of purely vegetable origin, they are very wholesome. Some people claim that they cannot digest nuts. They are easy to digest if properly eaten; they should not be taken as a duck takes corn. Any food taken by the vacuum-cleaner method is difficult to digest.

At a time when the conservation of our national food supply is of acute importance, we must consider our natural as well as our cultivated sources of food. I mean the food which is produced without labor and which can be had for the gathering. Our native nuts are the most important of such foods. In the light of our new needs let us briefly consider the possibilities of our wild nuts, either as excellent foods in themselves or as substitutes for other forms which are not now readily attainable.

The black walnut is our most widely distributed nut tree, and it may be considered our most valuable nut tree. The black walnut is very democratic; it is one of the most familiar trees of the landscape of every State in the Union. The black walnut alternates light and heavy crops; but of the trees in any locality, some will have heavy crops each year. A mature tree will give an average yield of half a bushel of shelled walnuts; and when one considers the vast numbers of walnut trees in rural sections and the high food value of the nuts, one is impressed with the importance of conserving this natural, rich food.

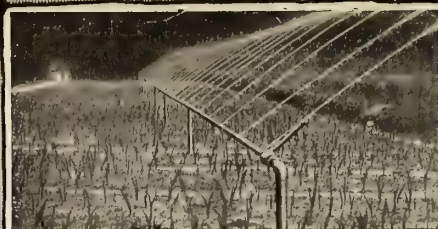
Both the shellbark and the shagbark hickory are excellent nuts. They and the walnut form the great triumvirate of our wild nuts that are worth while. In the South the pecan would take the place of the shellbark. The hickory-nuts are widely distributed over the North, East and Middle West. They prefer highlands and mountain valleys. Commonly these fine trees are found in bottom lands subject to overflow, and along streams and rivers. Their yield is not so commendably regular as is the yield of the walnut, but most trees, during bearing years, yield very heavily.

What I see happening in Southern Pennsylvania to the crop of wild nuts is typical, I fear, of what occurs elsewhere. Unless nut trees happen to be on highroads or quite near towns or villages, the crop is usually ungathered. It is said that vast quantities are thus allowed to waste because the price does not run more than sixty cents a bushel. But what crop that costs nothing pays better? The price mentioned is for walnuts; that on shellbarks is usually high—as much as \$4.00 a bushel being given for prime nuts. If people knew the value of nuts as food, the demand for them would instantly increase. A family of five or six members can readily make use of three bushels of hulled nuts between November and the following summer. In a dry, cool place shellbarks will keep a full year.

A few suggestions are offered as to the practical uses of nuts: 1. They form a rich garnish for leaf-salads. They may also be used in fruit salad, grape salad, and the like. 2. Nuts minced fine are an excellent filler for sandwiches. Nut sandwiches for lunch supply that staying quality that one needs who faces an afternoon's work. 3. Nuts are one of the chief "finishers" of certain types of cake and candy. 4. Nuts may be served in the place of a regular dessert. It is a boon to a housekeeper to have a ready resource of this sort.

ARCHIBALD RUTLEDGE.

Mercersburg, Pa.



Skinner System Sprinkling Line in garden of Alfred I. Dupont, Wilmington, Del.

Double Your Vegetable Yield from the Same Ground

CONCENTRATE. Make every square foot of your war garden yield you twice the crop in 1918 that it yielded in 1917.

Install the Skinner System of Irrigation and you can do so. Can do so because the Skinner System abundantly gives to your plants what they most vitally need—water. Gives it to them when they need it. Gives it to them in a fine, gentle, evenly distributed spray, like heaven's own showers.

Not only doubles crops. It protects them from drought-loss.

No work or bother attached. You simply turn a valve—the System does the rest. Saves labor as well as crops.

As a starter, send \$18.75 for our 50 foot Sectional and Movable Garden Sprinkling Line. Waters a space 50 feet square.

Sprinkler Booklet, we will gladly send you.

The Skinner Irrigation Co.

219 Water St.

Troy Ohio

SKINNER SYSTEM
OF IRRIGATION.

"MOSS AZTEC" POTTERY

has never been equalled in quality, at its price. Its rich coloring, and bold, yet elegant design, combined with highest grade workmanship, make it distinctly the pottery for the critical.

SERVICE. AND STYLE—PLUS,

at modest prices



"Moss Aztec" Ware comes in many distinct kinds and styles of pottery, from simplest vase to elaborate Jardinières, all bound to blend harmoniously with the richest home surroundings. Ask your dealer for "Moss Aztec" and write for the free catalogue To-day.

PETERS & REED POTTERY CO.
South Zanesville, Ohio

"HOW TO GROW ROSES"—Library Edition; 121 pages—16 in natural colors. Not a catalogue. Price \$1, refunded on \$5 order for plants. The Conard & Jones Co., Box 24, West Grove, Pa.

The Readers' Service gives Information about Greenhouses and Sash

Does a Clean Job—Saves a Lot of Work

That's the story of "SCALECIDE," the premier dormant spray. It will absolutely clean up San Jose scale—will also control apple canker, collar rot, bud moth, case bearer, aphids, pear psylla, etc. No other spray will do all this. "SCALECIDE" can be put on in one-half the usual time—a great saving in labor and you get through on time. Pleasant to handle. Sold on Money Back Basis.

Send today for booklet No. 14.

B.G. PRATT CO.,
Mfg Chemists
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Buy Wisely

Huntington Quality Seeds, Bulbs, Plants, Roses, and other good things for the particular gardener, are offered at prices certain to attract the wise buyer.

To buy at the lowest price is often poor judgment, but suppose we take all the risk, and offer to refund or replace anything not perfectly satisfactory. Order anything here or from our catalogue subject to your inspection. We want a share of your 1918 orders and of those in the years to come and we are willing to do our part to get and to keep your good will.

Here is a few "get acquainted" offers taken from the bargain page of our 1918 catalogue.

Gladiolus Offer No. 1, 6 America, 6 Baron Hulot, 6 Empress of India, 2 Mrs. F. King, 6 Independence, 6 Augusta; 36 bulbs guaranteed to bloom for **\$1.00 delivered.**

Gladiolus Offer No. 2, 2 Peace, 2 Panama, 2 Niagara, 2 Chicago White, 2 Fred Wigman, 2 Faust, 2 Attraction, 2 Willy Wigman, 2 Glory of Holland; 18 bulbs guaranteed to bloom for **\$1.00 delivered.**

Gladiolus Offer No. 3, 1 Pink Perfection, 1 Europa, 1 War, 1 Schwaben, 1 Mrs. Watt, 1 Loveliness, 1 Golden King, 1 Norma de Childs, 1 Rouge Torch; 9 fine sorts guaranteed to bloom for **\$1.00 delivered.**

Special Phlox Offer, 1 Eiffel Tower, 1 Europa, 1 Frau Antone Buchner, 1 Jules Cambon, 1 R. Von Hochberg, 1 Sieboldii, 1 Pantheon; 7 fine field grown sorts for **\$1.00 delivered.**

Special Iris Offer, 1 Tamerlane, 1 Princess of Wales, 1 Isolene, 1 Caprice, 1 Rhein Nixe, 1 Midnight; 6 fine sorts for **\$1.00 delivered.**

We are willing to abide by your decision as to the quality of any of the items offered here, or in our catalogue, which offers hundreds of items that would interest you. Free for a postal.

Ralph E. Huntington
Painesville, Ohio

Mastick Dahlias

are distinctly original; and famous for their wondrous beauty of form and coloring. I offer a limited number of

"Fantastique"—Orchid Paeony @ \$3.00 each
"Geo. H. Mastick"—Hybrid Paeony @ \$3.00 each

These were recommended for the "Award of Merit" (highest award) by American Dahlia Society, New York, Sept., 1917. Have other "Mastick" creations; also the best American and Foreign varieties. Catalogue.

M. G. TYLER

1660 Derby Street Portland, Oregon.

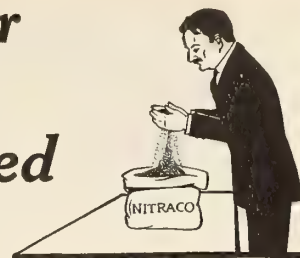
Vegetable Lore

What to Plant—How to Plant

A MAGAZINE for the benefit of the amateur gardener. Its aim is to teach planting, growing and cooking of vegetables. An all-year companion of the home gardener. No advertisements—no high-sounding terms. Just truthful, understandable advice for the happy men and women to whom the garden is a playground and a patriotic necessity. Full value to subscribers in excess of claims or money refunded. Issued monthly—sample free—\$1.00 per year.

MAURICE FULD, 1457 Broadway, New York

Nitraco is a Fertilizer That Will Meet Your Every Fertilizing Need



WILL do so because you can use it *safely on everything that grows*—be it vegetables, fruits, or flowers—with an assurance of *sure results*.

You can use it in any climate—in any soil. NITRACO comes in *finely granulated* form. It is smooth and velvety to the touch. It is absolutely free from lumps. Equally free from odor.

It is a fertilizer in *highly concentrated* form. No straw, sand or other useless filler mixed with it. It is "*all wool*."

NITRACO contains the plant foods that *all plants* vitally need: Ammonia, Phosphoric Acid, and Potash. Contains them in just the right proportions.

Part of NITRACO is *immediately available*. The other part continuously *becomes available*.

Not only boosts your plants at the *start*—it *keeps on boosting* them.

NITRACO is sold in units ranging from 1 lb. cartons to Ton Lots. You can get just the amount that you *actually need*.

Your Seedsman can probably supply you. If he can't we will sell you direct.

PRICES

1 lb. carton.....	\$0.26
5 lb. carton.....	0.75
10 lb. bag.....	1.25
25 lb. bag.....	2.50
50 lb. bag.....	4.50
100 lb. bag.....	6.00

Price for larger quantities upon application.

Horticultural Dept.

Harry A. Bunyard,
Manager

NITRATE AGENCIES
COMPANY

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New York

ROSES of NEW CASTLE

—the most reliable and beautiful book on roses ever published. Superbly printed in colors. Contains expert advice to home planters on how to grow roses and other plants. It's **FREE**. Tells all about our famous stock. Write to-day.

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ORCHIDS

Largest importers and growers of
ORCHIDS in the United States

Send twenty-five cents for catalogue. This amount will be refunded on your first order.

LAGER & HURRELL
Orchid Growers and Importers SUMMIT, N. J.

MOON'S Make This Possible



MOOON'S Evergreens and Plants are making homes more attractive, more delightful and more intrinsically valuable every day.

Yet just buying shrubbery does not make an attractive home. Thought in the selection and arrangement of varieties is required. Success vitally depends upon the healthfulness and vigor of the stock planted.

By buying Moon's Evergreens you get a wide choice of varieties—a quality that only intense culture gives. You obtain the advantage of Moon's experience and help in making your choice.

Write for Catalogue B-3

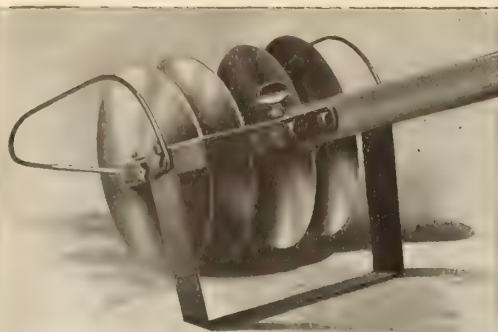
THE WM. H. MOON COMPANY

NURSERYMEN

MORRISVILLE, PENNSYLVANIA

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White Plains, N. Y.



Gardening Efficiency

is largely a matter of correct tools for different purposes. After the garden is made, results depend mostly on cultivation. It kills weeds, aerates the soil and conserves moisture. All this is done in the *easiest* manner with the

Perfection Cultivator

The lightest cultivator on the market, hence easy to operate. A perfect machine to do the job of cultivating completely; it cuts the weeds, pulverizes the soil, throws the soil to or from the rows. Leaf-lifters prevent injury to plants. A simple change of bolts automatically adapts the machine to shallow or deep cultivation, deep for use on loam or shallow cultivation on heavy clay. Of simplest construction and strong—est workmanship.

Any of 3 Sizes \$3.50 each

No. 1, with two discs, on which 6 inch or 7 inch knives may be used, will work rows, 9 to 11 inches wide.

No. 2, with four discs for use with 7½, 8¼ and 8¾ inch knives, will do the work between 11 to 14 inch wide rows.

No. 3, with four discs, and 10 or 11 inch knives, works 13 to 16 inches wide.

Satisfaction guaranteed or money refunded. Order to-day—don't fight weeds the old-fashioned way. Descriptive circular free, as is also our catalogue of seeds for present planting.

Leonard Seed Co.

226-30 W. Kinzie St. Chicago, Ill.



Making a Little Go a Long Way

I HAVE just read a book on gardening by a noted authority—a good book, too—in which a chapter is devoted to the immortal subject of fertilizers.

Unhappily this chapter is near the front of the book and to the hard-pressed suburbanite who fondly hopes that his garden will be a help in his struggle against the high cost of living, this is the message—manure, yes, the best of fertilizers, apply 60 to 100 cartloads to the acre! If the suburbanite's heart sinks it is no wonder when manure fetches two dollars and a quarter a load! [Even more nowadays.—EDITOR.]

The authority continues that if less manure is used 500 to 1,500 pounds, according to the grade, of commercial fertilizer should be used to supplement the more modest spread of manure. For commercial fertilizer we pay three dollars and a half to four dollars a hundred pounds! If the suburbanite, who notes in his evening paper (while he hangs to a swaying strap in the home-bound trolley) the rise in the cost of everything from shoes to rice, recovers from this last shock it is a marvel.

My garden happens most conveniently to be just one acre in size—and (writing under a pseudonym my shame is less) upon this acre each spring I broadcast two precious loads of manure, again in the fall two loads! I buy one hundred pound sack of the best commercial fertilizer and use it sparingly—as one would red pepper! These two with a modest compost heap, wood ashes from the house, rotation of crops and an endeavor to keep a fifth or sixth of the garden in clover and rye for plowing under—constitute my fertilizers.

Enough? Certainly not. I have fallen so low as to try to get an extra amount by begging my family to remember my birthday (coming so opportunely in April) by giving me a load of manure. They never have and the garden struggles along—I can afford to feed it not one cent more.

My soil is not particularly good—one of my spring pastimes is picking up stones (boulders they sometimes seem) and carrying them off by the wheelbarrowful. Nevertheless, we have vegetables enough for the whole year round, including potatoes, also small fruits for fresh and canned use. I have even taken a prize for tomatoes at a local show. That was my one splurge for my vegetables are not unusually big or fine—just ordinary nice ones. My radishes and turnips (two vegetables which we fortunately detest) are, I must admit, poor.

When I figure up my \$13.50 spent upon fertilizers against a low estimate of \$135.00 of the book's authority, I am very much pleased with myself, my vegetables and my garden and most glad that I read the discouraging authority after I had learned by experience how much can be done with a very little fertilizer, and not before.

Minnesota A. H. M.

[The books always deal in maxima doses, the ultimates, but much good gardening is done with less. Brains and intelligence count for much.—EDITOR.]

VICK'S

GARDEN and FLORAL GUIDE FOR 1918

IT'S FREE WRITE TODAY

Several New Features

Based on our experience as the oldest mail order seed concern and largest growers of Asters and other seeds in America. 500 acres and 12 greenhouses in best seed growing section. Our Guide is full of helpful information about planting, etc.—an invaluable aid to a successful garden. Illustrates and describes leading Vegetables, Flowers, Farm Seeds, Plants and Fruits. With our Guide, the best we have issued, we will gladly include interesting booklet, "A Liberty Garden."

Both are absolutely free.

Send for your copies to-day, before you forget.

For 25¢ we will include either our Superb Class And Color Aster Collection of three 20¢ packets, one each Perfection White, Mikado Rose and Autumn Glory (Pink.)

Or Our Finest Small Garden Vegetable Collection of six packets, one each Beets Vick's Early Market, early, best red. Carrot Danver's Half Long, extra fine quality. Onion Crystal White Wax, early, large, mild. Lettuce Big Boston, sure heading, delicious. Radish Vick's Scarlet Globe, most popular ever grown. Tomato Royal Red, very productive, deep rich color. For 50¢ both collections, and a packet of our famous Early Flowering Cosmos.

JAMES VICK'S SONS.
62 Stone Street, Rochester, N. Y.
The Flower City

LEPAGE'S

GLUE

HANDY TUBES

A HOUSEHOLD NECESSITY

Dahlias

"The Cream of the Best"
Imported and American Novelties
Catalogue on Request
J. H. Bowman, 497 Bway, Paterson, N. J.

Serviceable Attractions for Beautifying Home Grounds



"Pergolas"
Garages with
Pergola Features
Lattice Fences
Garden Houses

When writing enclose 10c. in stamps and ask for "Catalogue H-30."



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CAVITIES FILLED AND FILLED RIGHT

Decayed wood thoroughly scraped out. Cavity properly braced. Cement applied in sections, scientifically. That's The Bartlett Way. It means safe, sure results. All tree ailments we cure lastingly. Representatives go everywhere. Send for "Tree Talk," The F. A. Bartlett Co., 538 Main St., Stamford, Conn.

Strawberries

(The Wonderful Everbearing and All Other Fruit Plants)



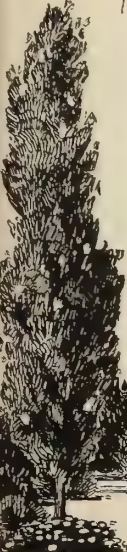
We are headquarters for all kinds of Strawberry Plants, including the Fall or Everbearing, which fruit in August, September, October and November as well as in June and July. Also Raspberry, Blackberry, Gooseberry, Elderberry, Currant and Grape Plants, Fruit Trees, Roses, Ornamental Trees, Shrubs, Vines, Seed Potatoes, Vegetable Plants, Eggs for Hatching, Crates, Baskets, etc. Large Stock, Low Prices. 35 years' experience. Catalogue free.

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Order Norway Maples NOW

Be ready to plant in early Spring. A most valuable ornamental tree that adds a distinctive touch of Beauty to lawn, street or avenue. Grows compact and develops into a wonderful shade tree. Norway Maples are notably free from insects.



Send to-day for our free descriptive catalogue, and price list of reliable Nursery Stock.

Morris Nursery Co.
Box 804 West Chester, Pa.



Don't Wear a Truss

Brooks' Appliance, the modern scientific invention, the wonderful new discovery that relieves rupture, will be sent on trial. No obnoxious springs or pads.

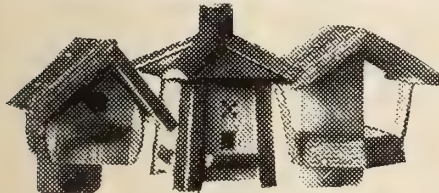


MR. C. E. BROOKS

Brooks' Rupture Appliance

Has automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No salves. No lies. Durable, cheap. Sent on trial to prove it. Protected by U. S. patents. Catalog and measure blanks mailed free. Send name and address today.
C. E. BROOKS 275D State St., Marshall, Mich.

The Readers' Service will give you information about gardening



Birds, our Garden Allies

Your choice for \$1.25, the three for \$3.50. If by Parcel Post add Postage. Weight of three 12 lbs. I am doing "My Bit" in making these Houses cheap so that all may use them to insure large crops.

A. P. GREIM "Birdville" Toms River, N. J.

You Can Grow Just Such Heads

right in your own garden, in most any soil providing you sow the right seeds at the right time and follow the culture directions in Buist's Garden Guide. Among our more than thirty distinct sorts of lettuce, one is sure to serve your needs. If in doubt which lettuce to grow, try

BUIST'S "VERIBEST" LETTUCE

The "very best" butter head lettuce for early crop, forming solid heads, with most appetizingly crumpled leaves of a rich yellow within, light green without. It is a sure header, free of bitter flavor at all stages of development and stands a long time before bursting. Pkt. 5c; oz. 20c; 1/4 lb. 60c postpaid.

Two Other Buist Quality Vegetables

Buist's Perfect Model Beet is a very sweet, fine-grained kind of deep rich color, and extraordinary quality. It retains this quality until long overgrown. Pkt. 5c; oz. 20c; 1/4 lb. 60c postpaid.

Buist's "Earli-Bell" Tomato is unquestionably the choicest early home garden sort of most prolific character. Fruits are smooth, flesh solid and of elegant flavor. Pkt. 5c; oz. 35c; 1/4 lb. \$1.00 postpaid.

Send for Buist's 1918 Garden Guide To-day

Besides offering the most dependable strains of the best quality vegetables to grow in the home garden, it gives valuable culture directions how to grow them. Every line in it is written to help you to better results in the garden. Its "Monthly Reminder" is a feature not found in any other seed catalogue. Write us TO-DAY—try above specialties.

ROBERT BUIST COMPANY
Philadelphia, Pa.
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WHOLESALE PRICES

On large orders of small fruit plants; large assortment of the BEST new and standard varieties to select from, including the BEST fall bearing kinds. 25 years' experience in propagating fruit plants, and every shipment backed by our ironclad guarantee. Send to-day for our free catalogue, showing eight pages of berries in their natural colors.

A. P. Weston & Co., Bridgman, Mich.

AMERICAN-GROWN TREES

OUR stock of trees, shrubs and plants is not curtailed by the stoppage of foreign shipments. We sell Andorra-grown.

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ANDORRA NURSERIES

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Irises, Peonies, Hardy Plants and Japanese Garden Specialties

Send for our illustrated 1917-18 Catalogue
Over 600 fine varieties of Irises

Rainbow Gardens 1980 Montreal Avenue
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"Mastodon" Pansy Seeds

THE finest pansy strain in the world. Separate colors. A marvelous number of new shades and varieties and of great size—up to 3 in. in diameter. Seed is not plentiful.

Price, pkt. 15c.

Glorious Delphiniums

Gold Medal Hybrids and Belladonna Seeds

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Fruit Trees, Ornamental Trees, Shrubs and Vines, the best Nut Trees, Hedge Plants and Garden Roots. Send for it to-day—it is FREE. Prices Low. Our Plants are raised under most favorable conditions, and cared for by efficient nurserymen. Their ability in digging and packing our stock is unsurpassed, and insures delivery to you in perfect condition. 40th year. 200 acres.

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THE ORIGINAL CHEMICAL 30,000 Sold —Fifth Year



More Comfortable, Healthful, Convenient

Eliminates the out-house, open vault and cesspool, which are breeding places for germs. Have a warm, sanitary, odorless toilet right in your house. No going out in cold weather. A boon to invalids. Endorsed by State Boards of Health.

ABSOLUTELY ODORLESS

Put It Anywhere in the House

The germs are killed by a chemical process in water in the container. Empty once a month. No more trouble to empty than ashes. Closet absolutely guaranteed. Guarantee on file in the office of this publication. Ask for catalogue and price.

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Ask about the Ro-San Washstand—Hot and Cold Running Water Without Plumbing

Dig Your Trenches The Easy Way

Digging is hard anyway, but it generally is made harder by heavy, clumsy tools. Light forks are not very practical, because they easily bend and soon give out. Experienced gardeners who prefer to do their own digging will be delighted with the

King Quality Trench Spade

The greatest utility spade yet invented for use in the home garden. So light, a woman can handle it without fatigue. So strong, it will outlast two common spades. It stands up under more pressure, goes into ground easier, and is a more satisfactory digging tool than any other implement we know of for the purpose.

PRICE \$2.25

Other Osmundson Labor Savers

of interest to every garden owner are the "Perfection" Seeder, Posthole Augers and Diggers, Turf Edger, etc., etc. Let Osmundson garden tools help you combat the labor shortage.

Osmundson Spade Mfg. Co.

Perry = = Iowa

The Art of Sowing Seed

SUNLIGHT; heat; moisture; suitable soil; ventilation; and sufficient room, are the sum total of points to be thought of in raising plants from seed.

Sunlight is even more necessary for small plants than for those nearly grown. In poor light, growth may be rapid but weak and spindly, and the plants either fail to survive transplanting or mature poorly. Even 48 hours of poor light, when the little seedlings are just coming up, may injure them almost beyond repair. Be sure you can provide plenty of direct sunshine—or don't attempt to grow your own plants.

A warm temperature—45 degrees or so at night for hardy early things like cabbage and onions; 55 for tender things such as tomatoes or Salvias, with ten to fifteen degrees more in either case during the day, is required to get satisfactory development. The plants will live in a considerably lower temperature, but they will not develop into first class plants. While the seeds are germinating the temperature may be some ten degrees higher with advantage. A fairly steady, even temperature is also important; decided ups and downs tend to check growth.

Moisture is important for the air as well as for the soil. The latter should be kept evenly moist; never allowed to get actually dry, but not watered so much as to become soggy. The soil in seed flats, in flats for transplanting, and even in benches or frames, should have a layer of some porous material, such as small cinders, sod, leaf mold screenings, or fine manure, under it, to absorb or permit to drain off any surplus water after watering or rains. Apply water on bright mornings, so that the surface soil and foliage may dry off before night; dampness and dark weather together make danger from the stem rot or "damping off" disease.

The character of the soil in which to start the seeds is important. If you are starting but two or three flats of seeds, the easiest and quickest way will be to obtain some prepared soil from the nearest florist. To make it for yourself, get humus, or some leafmold from the woods, and mix with clean light garden soil, using a third to a half of the latter. Leafmold should be rubbed through a sieve with about a quarter inch mesh. The coarse fibrous residue remaining makes ideal drainage material to put in the bottom of the flats or benches. The soil for transplanting, after the seedlings attain the second true leaf, should contain about half as much humus or leafmold as that for seedlings, and have a little fine bone meal mixed through it—a pint or so to a bushel of soil; prepare it a week or two before using. Manure used in the bottom of the flats or in the frames, under the soil, serves the double purpose of supplying plant food and good drainage.

Ventilation and space. At all stages of growth frequent ventilation and plenty of room are essential to the growing of rugged plants. Admit fresh air every morning to room, greenhouse or hotbed, unless the weather is so severe that there is danger of chilling the plants. If seedlings come up thickly, they must be either thinned out at once, or transplanted just as soon as they are big enough to get hold of. In transplanting allow two to three inches each way for the plants of cabbage, lettuce, cauliflower, etc.; beets and kohlrabi may be put a little closer; tomatoes, peppers and eggplants should be transplanted a second time, or better, put into individual pots. The square ones being preferable.





Residence of C. D. MacDougall, Esq., Auburn, N. Y.

IRON FENCE AND ENTRANCE GATES OF ALL DESIGNS AND FOR ALL PURPOSES.

WE INVITE CORRESPONDENCE WITH THOSE WHO ARE INTERESTED.

The Stewart Iron Works Co., Inc.
"The World's Greatest Iron Fence Builders"
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6 Glorious ROSES

Hardy, Everblooming, Guaranteed True to Name. All bloom this summer. Mailed postpaid for 25c

Admiral Ward, Dark red.
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10 Packets Flower Seeds
 The following collection blooms from early summer to late fall: Aster, Sweet Alyssum, Marigold, Petunia, Pansy, Phlox, Poppy, Salvia, Verbena and Zinnia. Generous Pkts. Extra special value postpaid 20c. I will also mail 5 packets of Hardy Daisy seed (five colors) for 15c or I will mail the above 3 collections, the 6 Roses, the 10 pkts. of Flower Seed and the 5 pkts. of Hardy Daisy Seed all for 40c. I will send six new, hardy roses in large two-year size postpaid for only \$1.25.

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Data as to increased crop yields due to the use of Nitrate are available. Why not make your business of crop fertilizing profitable by the use of Nitrate of Soda whose efficiency is known?

A bushel of corn or wheat or a bale of cotton today will buy more Nitrate and more Acid Phosphate than ever before.

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HAYES FRUIT-FOG SPRAYERS

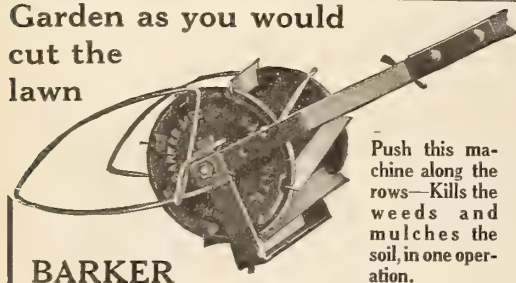
Last year thousands of dollars were added to fruit profits by Fruit-Fog! No greater success for controlling all pests and fungus diseases which destroy your fruit, has ever been perfected!

Fruit-Fog is the finest known form of spray. It is produced by the high pressure of Hayes Fruit-Fog Sprayers. Being superfine, it stamps out the millions of hidden germs and eggs which no coarse, heavy, low pressure spray can reach.

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Push this machine along the rows—Kills the weeds and mulches the soil in one operation.

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Put your Country Home behind the Army

You must graze sheep on those lawns of yours to save labor and help clothe a battalion of infantry. You must put hogs into that field of decaying tree stumps to help feed a regiment at the front. You must do these things or else shut up your country place and call it waste land. Ten to one your country place is a liability, not an asset. There's nothing particularly wrong about that—in times of peace. Now, however, this nation has got to rid itself of the things that *drag*. It must do away with them or turn them into things that *pull*—that will help win the war.

The one great magazine of the country home—in war as in peace—is undertaking the task of showing, practically and specifically, how you can make your country place help the nation in its time of need. Its editors are working with the Government, with Hoover, with Garfield, with the Department of Agriculture, with the experts in animal husbandry, gardening, farm machinery, poultry raising—getting the last word from all upon what you country home owners can do to help solve the nation's problems. Take COUNTRY LIFE'S Course of Instruction on Estate Management in War Time. Don't lose another minute. Enroll in the Army of Production and

Help win the War

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A beautiful new Aster "Moreton Pink"

A rich, glowing pink Aster, the first of this color which all growers have been trying to get. A magnificent flower of finest form, and with long graceful stems. (See our catalogue.)

**Harris' Flower, Garden and Farm Seeds
Always Grow**

They are all tested and the percent that grow is *marked on the label*. You do not have to guess how thick to sow. We raise at Moreton Farm many vegetables and flower seeds and plants of the *very highest quality*. They can be depended upon to give the very best results, and they cost no more.

Ask for our catalogue (free) and get your seed direct from the grower at wholesale prices.

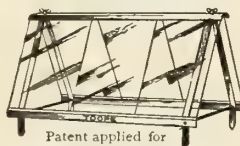
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Vegetable, Flower Seeds and Plants of the very highest quality

COLLAPSIBLE FORCING FRAME



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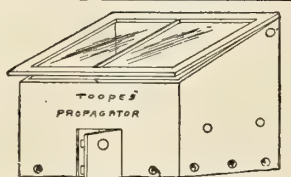
Garden hobbyists everywhere will be interested in two new devices designed to increase gardening results and joys

For Forcing Vegetables, etc., is a rigid frame, so braced that glass cannot be blown out, and is watertight. Price, \$1.35 each (without glass).

Write for descriptive circular of these novelties. Ask your nearest horticultural dealer for full prices. F. O. B. Boston.

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The Propagator is the greatest little "hothouse" ever invented. Heated by lamp. Great for forcing seeds and seedling plants. Prices from \$6.00 and upwards.



100 berry plants \$2.25
—bear from May till frost

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of living in the country—and not having any big trees around your own home—to look out upon, to rest and play under, to make friends with? Expensive?—too long to wait? Neither—not when you put it up to us to plant full-grown shade trees, of your own picking—visions of loveliness—havens of cool comfort—right on your lawn—in 3 days' time, at astonishingly low charges Ask us all about it.

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SITUATION WANTED as head gardener or superintendent. English, 40, married. Over 25 years, practical experience raising vegetables, farm crops, fruits, flowers, greenhouse product, care to poultry, dairy, general livestock, pruning and spraying of all fruit and shade trees. First class references. Address Box 121, care the Garden Magazine, Garden City, N. Y.

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OYAMA—Odorless Fertilizer. Helps all Plants.

It stimulates and invigorates the system of the plant. A discovery based on scientific research. Highly concentrated and easily applied. Results show quickly. Price per box by mail prepaid 30c. Garden Size \$1.10 (enough to make 32 gallons.) Order to-day.

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HALIMODENDRON argenteum is a shrub apparently little known in gardens and deserving of a much wider cultivation. It is a wide spreading shrub and grows about six feet tall, bearing a number of sharp spines on the older branches; is perfectly hardy and flowers profusely every year toward the end of June and lasts in flower for about three weeks, being very attractive the whole of the time. The flowers, which are of a pale purple color, are borne on lateral racemes of two or three together and are pea-shaped, the plant being a member of the Leguminosae. The foliage is compound, and of a silvery appearance, being covered with pale, silky hairs, and is deciduous. Standing both heat and drought with no ill effects is much in its favor, and as a native of the dry, naked salt fields of Siberia suggests it as a valuable plant to succeed in the neighborhood of the seashore. The easiest way of propagation is to graft on *Caragana arborescens* in January, but a few will also root from cuttings put in sand at the same time of the year. Seedlings also come up fairly readily especially if left on the shrub till one or two good frosts have occurred before being planted.

DIRCA palustris is one of our earliest spring flowering shrubs. The flowers which appear before the leaves early in April are borne in clusters of two or three together and though small are usually very abundant. These are pendulous and of a yellow color and are made more attractive by the yellow stamens that protrude below the corolla. The flowers are followed by numerous small berry-like fruits of a greenish-yellow color and ripen early in the summer when they very quickly fall off. *Dirca palustris* is wide spreading and densely branched and the branches and bark are very tough in character which gives to the plant its common name of "Leather-wood;" it is so tough in fact that knots may be tied in the shoots without fear of injury to the plant, and snow often lays the bushes down flat from which no harm usually results. It is found growing wild on the borders of woods in damp, wet situations, and consequently requires a fairly moist location to be successful in its cultivation. One interesting point about the *Dirca* is that it has subpetiolar buds—that means that the buds are formed under the base of the leaf stalk, as is common with the Plane tree. The bud is consequently concealed until the leaf falls off in the autumn. *Dirca palustris* is closely related to the *Daphnes* and like them is difficult to root from cuttings, but it comes very readily from seed, and for this reason more of it should be found in our gardens, especially by those people who love the early flowering shrubs.

Jamaica Plain

WM. H. JUDD.

Send ROSES From Your Garden

Flowers carry your message of love, sympathy and friendship. How much more pleasure there is in sending those you have grown in your own garden. There is pleasure and relaxation in watching them grow and unfold their bloom. Roses add to the joy of living.

Here at Cromwell we have thousands of plants that are waiting to make you a garden of glory.

We have evergreens, shrubs and trees—all described in Cromwell Gardens Handbook, a copy of which will be sent you for the asking.

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A. N. PIERSON, Inc.

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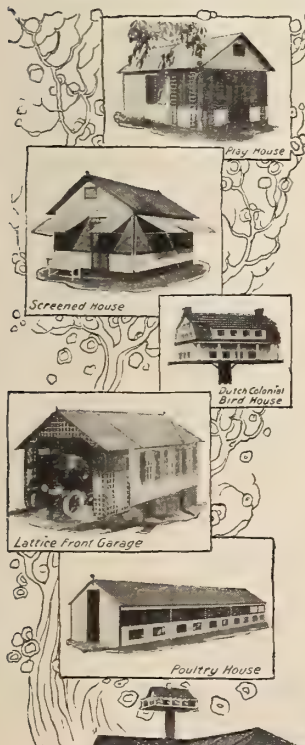
A Garden of Gladioli is a Garden of delight

WITH summer days come handsome flowers of the Gladioli to remain with us all summer long. Every day the flowers unfold a new color combination until you wonder when Nature will exhaust her ingenuity. Many times have I thought, "surely there can be no more colors; there can be nothing new," and then I go forth into my fields to find a flower unlike any that I have ever seen.

If you plant my mixtures you

will always be kept on the *qui vive*. There is fascination in anticipating the colors and great is the joy when you discover a combination new to you. I began growing Gladioli because I loved them. My success led to growing them for other flower-lovers, until to-day I am one of the world's Gladioli specialists. My booklet "The Glory of the Garden," tells of my experience. You will enjoy reading it; may I send you a copy, free?

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HODGSON Portable HOUSES

When Spring comes you don't want to bother with building. Even the erection of a play house or screen house will make enough dirt, dust and din to take away the joy of Springtime.

Hodgson Portable Houses have made it possible for you to get just the house you want without the usual disagreeable worries of building.

Hodgson Houses are built at the Hodgson factory. They are made of neatly finished, fitted and painted sections which can be easily put together and taken apart.

You select the bungalow, cottage, garage, play house or poultry house you want from the Hodgson catalog. Then by paying 25% of the cost of your house we prepare and hold it until wanted. We then ship it in sections and it is just a day's work for unskilled workmen to put it together. Send for a catalog today.

E. F. HODGSON CO.

Room 228, 116 Washington Street, Boston, Mass.
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"Ye Olde Tyme" Garden Wears a Modern Dress

A modern garden may have the charm and fragrance of "Ye olden tyme" if perennials predominate. My collection of hardy plants at The Terraces is among the most complete in America. It embraces Hollyhocks in many colors; Sweet Williams, including a splendid soft pink variety; Stocks, the "Gilly-flowers" of old; Michaelmas Daisies, Columbines, Phlox, Irises that will bloom the first year, rock plants, bog plants, and plants for shady places.

These Coast-Grown Plants Produce Immediate Results

adding character to your garden and supplementing the shrubbery plantings. February is one of the best months for planting in the West; my plants are dormant and ready to ship at once. For Eastern customers I can hold back the plants for later delivery. My Catalogue E tells where to use and how to grow these delightful plants.

Californian Native Bulbs, Plants and Seeds are a specialty with me. It is now too late for bulbs, but many Shrubs and Plants can be set until March. Catalogue A tells about these natives of the Coast.

Catalogue E or A (or both) will be sent to anyone interested. Send your name and address.

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Burpee's Dollar Box of Vegetable Seeds

Last year we offered for the first time Burpee's Dollar Box of Vegetable Seeds: The sales exceeded by many thousands our fondest expectations.

For 1918 it has been improved by the addition of a complete garden plan and leaflet on Seed Sowing. It contains a Collection suitable for the home garden, comprising a careful selection of Burpee's Specialties mentioned below, and is mailed to your address for \$1.00.

Bean	Burpee's Stringless Green Pod	Lettuce	Wayahead
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Beet	Burpee's Improved Blood	Radish	Scarlet Turnip
Cabbage	Burpee's Allhead Early	Salsify	Sandwich Island Mammoth
Carrot	Chantenay	Sweet Corn	Golden Bantam
Lettuce	Iceberg	Swiss Chard	Large Ribbed White
		Tomato	Chalk's Jewel
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If purchased separately, the above Seeds would cost \$1.65

Burpee's Annual for 1918

The Leading American Seed Catalog, has been enlarged and improved and is of the greatest help to all who intend planting a garden; it contains the latest and most reliable information about the "Best Seeds that Grow."

216 pages with 103 colored illustrations of the latest novelties and hundreds of illustrations of every variety of Vegetable and Flowers. It is mailed free to those who write for it. A post card will do. Write for your copy to-day, and please mention THE GARDEN MAGAZINE.

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Potatoes
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GARDEN

MAGAZINE

Annual Novelty Number

MARCH 1918
Price 25 cents





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CHILDS' NEW GIANT KOCHIA (Christmas Kochia or Kochia Childsi)

An entirely new and distinct garden or pot annual, admitted to be one of the most decorative plants grown. It is of solid pyramidal habit, dense and symmetrical at all stages of growth, of the most attractive light green color, changing in late autumn to a beautiful claret-red and holding its color until about Christmas, regardless of snow or ice. The plant is three feet tall and over two feet thick, a solid bouquet of exquisite foliage. It is the latest show plant of the garden, remaining beautiful long after everything else has faded and gone. Its rich color shows to wonderful advantage after snow has fallen. No new plant on our show grounds ever attracted so much attention as this during the entire summer and fall. As a pot plant it is very valuable, rivaling the palm and the fern for decorative effect, beauty and usefulness up to the holidays. It is easily grown from seed indoors or out. We can say without reserve that this new Kochia is one of the most magnificent plants in cultivation, sure to succeed anywhere in all soils and all climates.

Seed, per pkt., 20c; 3 pkts., 50c.

THE CHINESE WOOLFLOWER

The most magnificent garden annual. Its ease of culture and long continued season of bloom (early in July until frost), together with its massive bunches of wool-like flowers and glowing crimson color, make it the showiest, most odd and novel garden flower.

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AMERICAN MASTODON PANSIES

Perfect Marvels in Size and Beauty

These Pansies have a robust vigor unknown in other strains. Flowers larger than the Trimar-deau, with the substance and rounded form of the German strains, a touch of the Masterpiece in the artistic curves of the petals, the wonderful colors of the Orchid Pansies and a delicate fragrance like the violet-scented.

The enormous size of blooms, nearly four inches across, clear tones of color and with wonderful tints and variegations and free-flowering qualities, even through the hot summer weather, will be a revelation.

Mixed Colors—Such as white with dark center, dark blue and light blue, pure white, black, lavender, violet, blue, bronze (new), royal purple (new), rose, cerise-red, red with silver rim, mahogany, yellow, wine-colored, red and gold, striped, margined, etc.

10c per pkt.

NEW ASTER AMERICAN BEAUTY

The finest type of branching Aster with immense, bright, rosy carmine blossoms on two foot stems. It has the widest petals, largest double flowers, longest stems and best color among Asters.

10c per pkt.

SPECIAL OFFER, 25c—These are the four greatest Flower Seed Novelties; and we will mail one packet of each for 25c (just one-half regular price) together with our little booklet "How to Grow Flowers for Garden or Window," and our big catalogue with a dozen large colored plates.

All for 25c, order now

ORDER AT ONCE. THESE OFFERS WILL NOT APPEAR AGAIN.

ICE-PROOF MASTODON PANSY PLANTS

Have a Beautiful Bed of Pansies at Small Cost

We grow young, vigorous plants of the Mastodon Pansy in open ground from September-sown seed that are ready for delivery from January to May. For the Southern and Pacific States we can ship now. For colder latitudes shipments are made as early in spring as the plants can be put out. They are hardened by the ice and snows of winter, and in spring are ready to jump into vigorous growth and bloom.

Price—Mixed colors, postpaid, 25 for 60c; 100 for \$2.00; 500 for \$9.00

12 NAMED GLADIOLI CHILDSI FOR 50c

A collection of 12 distinct Giant Childsi Gladioli, named, all extra fine sorts and some are new. All colors represented, white, yellow, blue, pink, scarlet, violet, variegated, etc. Collection for 50c, postpaid. 100 choice mixed Gladioli Hybrids for \$2.50, postpaid.

7 EXQUISITE DAHLIAS FOR \$1.00

All of the very finest varieties in all classes and colors.

7 named sorts, strong field tubers for \$1.00, postpaid.

10 FLEUR-DE-LIS FOR 50c

All colors mixed. Fine Garden Iris for 50c, postpaid.

THE 5 VERY FINEST NEW CANNAS FOR \$1.00

These are the finest dwarf, large-flowering Cannas in cultivation.

Fire Bird—Intense cardinal-scarlet, largest size.

King Humbert—Orange-scarlet, dark foliage.

King Humbert Yellow—Finest yellow spotted.

Hungaria—Exquisite rosy pink.

Panama—Orange with crimson and gold.

30c each;
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All Postpaid

OUR GREAT VEGETABLE NOVELTIES

We are introducing this year some wonderful new vegetables, and especially recommend the following:

Matchless Lettuce—Novel and distinct in every way and the finest Lettuce grown. Pkt., 15c.
Childs' Supreme Muskmelon—A 20-pound Melon of a rich and luscious quality that is unsurpassed. Pkt., 20c.

Tomato Top Notch—The earliest and in all respects the best and most wonderful Tomato. Pkt., 15c.

Hulless Pop Corn—a real novelty and wonderfully fine. Pkt., 10c.

Klondyke Watermelon—The acme of perfection in quality. Pkt., 10c.

SPECIAL OFFER—These 5 novelties of exceptional merit for 50c.

Our Catalogue of Flower and Vegetable Seeds, Summer-flowering Bulbs, Window and Bedding Plants, Hardy Perennials, Vines, rare new-flowering Shrubs, and the greatest new berries, free to all who apply. Many sterling novelties. We are the largest growers of Gladioli, Cannas, Dahlias, Lilies, Iris, etc. Our gardens at Floral Park and Flowerfield comprise more than one thousand acres. We are headquarters for all Bulbs as well as Flower and Vegetable Seeds, and our stocks are large and complete.

Address: JOHN LEWIS CHILDS, Inc., FLORAL PARK, New York



\$6 Buys Enough Nitraco to Fertilize the Average Garden and Lawn for an Entire Season



4% Ammonia, 8% Available Phosphoric Acid, 2% Actual Potash

NITRACO is a universal fertilizer in such highly concentrated form that 100 pounds are ample for an entire season, for a garden containing 8,000 square feet, if planted entirely to potatoes. Or for one of 12,000 square feet of general vegetables or flowers.

It will give abundant food, the season through, for a lawn containing 12,000 square feet.

Or to say it another way, 100 pounds of NITRACO are sufficient for both the average garden of 4,000 square feet and a lawn of 8,000.

Altho highly concentrated, it will not injure the most delicate plants, unless used to excess.

It is so perfectly balanced in the foods it contains, that it can be used with highly satisfactory results on anything that grows.

Being odorless, it can be used at any time without offense.

Being finely pulverized, it is easy to use.

Being so highly concentrated, every ounce of it is actual plant food.

Its use means conservation and economy in every sense of the word.

It keeps indefinitely.

With NITRACO, you can give to your vegetables, flowers or lawn, just the right amount of nitrogen, phosphoric acid and potash they need.

Directions for First Use

For your garden, sow it in the seed drills, scattering a little dirt over it. Then put in your seed and cover with dirt in the usual way.

This under-crop fertilizing, as it is called, will be sufficient for the immediate needs of the roots and to carry the average plants through the season.

Second Use

As the season advances, if you want extra fine results, sow a little NITRACO along the surface near the roots and cultivate it in. The increased growth will be quickly noticeable.

This is a particularly good thing to do when tomatoes, peas and beans are just ready to bloom. It payingly increases both the quantity and quality of the yield.

Making Mixtures

If you have fire place wood ashes or humus, mix NITRACO with it in quantities of 10 parts or less to 1 of NITRACO. These mixtures are especially good for Second Use purposes.

For all summer blooming roses, it can be dug around the roots every two weeks. The increased bloom results will surprise you.

We Prepay Express

Send us your \$6 for 100 pounds of NITRACO, and we will pay the expressage anywhere within 150 miles of New York. We will do the same on smaller amounts.

Order now

The congested condition of the railroads makes even express deliveries slow, so it is important that you order early.

Free Advisory Service

Whatever your fertilizing problem may be, do not hesitate to put it directly up to us. Our Mr. Bunyard, who is a garden enthusiast and fertilizing expert of many years' standing will be glad to give it his personal attention, and suggest its most logical solution. This Advisory Service will cost you nothing and oblige you not at all.

Send for "Handbook of Fertilizers"

Our "Handbook of Fertilizers" is yours for the asking. It is a veritable "gold mine" of valuable information.

We handle Nitrate of Soda, Fertilizer Materials, and Insecticides of all kinds.

NITRACO PRICES

100 lb. bag.....	\$6.00
50 lb. bag.....	4.50
25 lb. bag.....	2.50



Horticultural Department

108 Pearl St., New York City



Are Flowers Non-Essentials?

DECIDEDLY NOT! They are essential as messages of love and sympathy to the sick or sorrowful who need their cheery companionship; they are essential for the table and for room decoration, to brighten somber days: they are essential on all festal occasions; and growing them is essential as a means of mental relaxation and healthful exercise. Resolve therefore to "*Grow Flowers as Usual*" this year.

Heatherhome Flower Seeds

have proved a revelation to American Gardeners. We have in past years developed many wonderful creations that have never yet been equalled. This year we again have several marvelous novelties that all garden lovers should grow and enjoy. In order that every reader of this magazine may obtain these choice beauties and thus become intimately acquainted with the surpassing merits of **Heatherhome Seeds**, we make the following unusually liberal and attractive offer:

Send Us One Dollar

and we will forward post-paid the following *Heatherhome Collection of New Creations for 1918*: If bought separately, these seeds would cost \$1.35.

- 1 large packet **American Beauty Aster**—a magnificent new variety of the late branching type. An unusually strong grower, with enormous blossoms of a rich deep pink, like that of the American Beauty Rose. Regular price 20c.
- 1 large packet of our new **Midsummer Giant Crimson Cosmos**, blooming from July to Frost. Flowers fully as large as the late sort and of a clear glowing crimson. Regular price 25c.
- 1 ounce **Sweet Peas**, "**Heatherhome Beauties**." Not an ordinary mixture, but a **blend** of 120 distinct varieties grown separately—Includes all the latest novelties of merit. Regular price 25c.
- 1 large packet of the lovely **Nelrose Snapdragon**, with delicate pink flowers, of the same shade as the Hermosa Rose. Plants semi-dwarf; bloom from July to Frost. Regular price 25c.

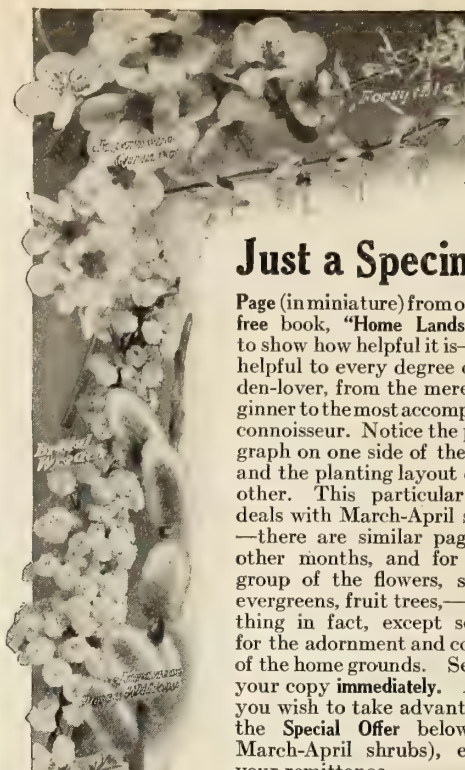


- 1 large packet of the new and striking **Calendula, Orange Glory**—color a really glorious shade of brilliant golden orange. Blooms from July to November. Regular price 15c.
- 1 large packet of our special strain of **Jumbo Zinnias**. Monster flowers 4 inches in diameter in white, pink, gold, scarlet and crimson. Regular price 10c.
- 1 large packet of our charming new **Dianthus**, "**Pink Delight**," the latest and loveliest variety of the popular Japanese Royal Pinks. Regular price 15c.

Our 1918 Catalogue is Ready

We have called it "*The War-Time Flower Garden*." It lists nothing that is not well worth growing: all undesirables have been discarded. Yet it covers everything in Seeds, Plants and Bulbs, that is essential to the perfect garden. Shall we mail you a copy?

Heatherhome Seed and Nursery Company
258 Fifth Avenue
New York City



Just a Specimen

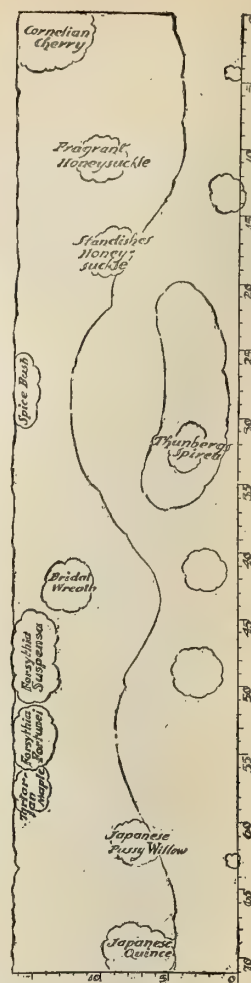
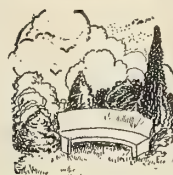
Page (in miniature) from our new free book, "*Home Landscapes*," to show how helpful it is—really helpful to every degree of garden-lover, from the merest beginner to the most accomplished connoisseur. Notice the photograph on one side of the page, and the planting layout on the other. This particular page deals with March-April shrubs—there are similar pages for other months, and for every group of the flowers, shrubs, evergreens, fruit trees,—everything in fact, except seeds—for the adornment and comfort of the home grounds. Send for your copy **immediately**. And if you wish to take advantage of the **Special Offer** below (for March-April shrubs), enclose your remittance.

SWEET SMELLING GROUP

Here are sixteen fragrant plants. Just enough to plant around a garden seat:
2 Mock Orange, 1 Sweet Bay Magnolia, 5 Lilac, 2 Sweet Flowering Crabs, 6 Bayberry, all packed for shipment \$8.00.

I. HICKS & SON

Sixty Years of Knowing How
WESTBURY LONG ISLAND



EVERGREENS

in sizes up to 18 feet—60 varieties. Plant them freely. They are decorative twelve months in the year. That we offer

Quality as well as Quantity

is shown by the fact that
**All But 3 Trees Grew
in an
8,000 Dollar Order**

These were big trees, many of which were 15 to 20 feet high—Pines, Hemlocks, Douglas Spruce, etc. Rosedale Nurseries are well stocked with both extra and ordinary sizes of **Hardy Trees**, including **Fruit** (dwarf and standard), **Shrubs**, **Vines**, **Roses** and **Perennials**.



DOUGLAS SPRUCE

EVERBLOOMING ROSES

(Our Other Spring Specialty)

Beautiful, fragrant, true to name. All field-grown—heavy 2, 3 and 4-year plants. Extremely low-budded Irish Roses can be properly set with bud or graft 2 inches below the surface (as it should be), and still keep the root in the rich, mellow surface soil.

We will mail 3 helpful Catalogs—one in March, one in June and one in August. Get your name on our mailing list. Write today.



Rosedale Nurseries
Box A
Tarrytown, N. Y.

S. G. HARRIS,
Prop.

Win This War

Co-operation Will Help Win Destruction Will Help Lose

Destruction: 50,000 Bearing Size Fruit Trees Will be Destroyed Unless the People Want Them for the Cost of Digging, Packing and Clearing the Land

In our valley are approximately fifty thousand bearing age fruit trees that are on leased land and that are getting too large to work and the land must be cleared this spring for food crops.

These trees are 3, 4, and 5 years old—some of the early varieties have had fruit on this year. We are going to transplant all we can of them, but spring is our busiest season and we have to work night and day to get our orders off and we have lost a good deal of our help for the Army and labor will be scarce. We figure there will be 50,000 of these trees that will not be taken care of—we are offering them to you for what it cost to dig and pack them and clear the land. These trees are well grown, have good fibrous roots and well shaped heads.

These trees must be dug and the land cleared off this spring and unless the people who read this notice take them they will be burned up.

This is your opportunity to start an orchard of large trees

that will bring you in quick returns and at a time when the orchard business is going to boom.

The finest orchards in the world have been destroyed in Italy, Belgium, and France—hundreds of thousands of fruit trees—it will take many years before these orchards can be replaced. America must supply the fruit for these people—every paper you pick up tells about the destruction of the orchards in these countries and the immense revenue it has been to the countries both for home consumption and for export. *We must supply not only these countries with fruit but also the countries they exported to.*

The consumption of fruit in the United States will be triple what it has been before on account of the high cost of meat, sugar and other articles. The food administrators are advocating now the planting of fruit in every available spot in your gardens and on your farms and they are also advocating the consumption of fruit in place of meat and other food stuffs.

Important

I have just received the following message from the Victor Deitriche Co., Angers, France, one of the largest seedling growers in that country and for whom I am the American representative.

We have here in France very few seedlings of Apple, Pear, Cherry, and Plum for this spring and not much of any for next Spring.

Victor Deitriche,
Angers, France.

The seedlings from which all fruit trees in America are grown come from France with the exception of a few Apple and Pear. This message means that we will receive but a very few seedlings in the next two years if we receive any at all. If we do not receive the seedlings from France there will be very few trees for sale 2 years from now as these seedlings cannot be successfully grown in this country. 2 years from now you will be lucky to get 1 year trees for \$1.00 each.

Take This Warning

Get what you want now while you have the chance. No matter whether you only want a few for your home garden or whether you want to plant an orchard.

Special Prices on Bearing Size Trees

As long as they last—which pays merely for the packing, digging and clearing the land. Every tree goes out with a guarantee.

Bearing Size Apple Trees. 19 cents each.
\$1.85 per 10. \$17.90 per 100.

Principal varieties we have
Duchess of Oldenburg, Gravenstein, Maiden Blush, Wealthy, Baldwin, Ben Davis, Improved Ben Davis, Gano, Hubbardston, King, McIntosh Red, Northern Spy, Pewaukee, Stark, Stayman's Winesap, Tolman Sweet, R. I. Greening, Wagener, Wolf River, Winter Banana, York Imperial, Transcendent Crab.

Bearing Size Standard Pear Trees. 19 cents each.
\$1.85 per 10. \$17.90 per 100.

Principal varieties we have
Bartlett, Clapp's Favorite, Anjou, Duchess, Flemish Beauty, Rossney, Seckel, Kieffer.

Bearing Size Plum Trees. 19 cents each.
\$1.85 per 10. \$17.90 per 100.

Bradshaw, Coe's Golden, Diamond, Fellenburg, Grand Duke, Geuil, German Prune, Niagara, Lombard, Moore's Arctic, Shropshire Damson, Shipper's Pride, York State Prune, Abundance, Burbank.

Bearing Size Cherry Trees. 19 cents each.
\$1.85 per 10. \$17.90 per 100.

Bing, Black Tartarian, Governor Wood, Napoleon, Lambert, Yellow Spanish, Baldwin, Dyehouse, Early Richmond, Large Montmorency, English Morello, Olivet, Osthime, Wragg.

Bearing Size Peach Trees. 19 cents each.
\$1.85 per 10. \$17.90 per 100.

Alexander, Belle of Georgia, Crawford's Late, Carman, Chair's Choice, Fitzgerald, Iron Mountain, Niagara, Elberta, Crawford's Early, Champion.

10% discount will be allowed from the above prices on all cash orders received direct from this notice on or before March 20th.

Every tree guaranteed strictly true to name, free from all scale and disease and perfect in every way. With good fibrous roots and well formed heads. These trees will be sent to you for your inspection provided $\frac{1}{2}$ the amount of the order is sent in as a matter of good faith. If they are not what we represent them you do not need to take them.

Co-operation

Don't take just what you want for your orchard now, or what you feel you can plant but take 100, 500 or 1000 of these trees, plant what you can of your orchard this spring, put the others in rows five feet apart and let them stand until next fall or next spring or whenever you get ready. We will give you special instructions how to handle them in this way.

Have a Tree Planting Day in Your City or Town this Spring

We will make a special price on a car load of these trees to the Mayor, Chamber of Commerce or Board of Trade of any town who are interested in their town and who would like to see their people get the opportunity to secure these bearing size trees for just what it costs to dig, pack and clear the ground. If you are interested in securing some of these trees, talk with your neighbors about it and get them interested. Any individual can have as many of these trees as he may want as long as they last. Bring a car into your section and see how readily they will sell for 30 and 40 cents. Make a tree planting day in your city this Spring. Fruit is going to be high for years to come, and if your people have fruit they will conserve on other food stuffs. Let us give you plans to start the movement. Let your people have these trees rather than have them destroyed.

Not one cent to be paid until trees are distributed to the people and everyone satisfied.

First come first served—we can only serve a few—it will cost you nothing to get information but you had better write or wire us now.

We have been wholesale fruit tree growers for 25 years. Our trees are now in bearing in some of the largest orchards in the United States.

Our catalogue "Good Fruit and How to Grow It" contains description of all varieties of fruit trees, dwarf fruits, berries, currants, etc. It will be mailed FREE.

Order your bearing size direct from this notice or you may be too late.

JOHN REILLY CO.

99 Reilly Road

Dansville, New York

Special Collections of Bearing Size Trees

For what it cost to pack, dig and clear the land. All fine 3, 4 and 5 year old trees guaranteed strictly true to name, free from scale and all diseases, with good roots and well balanced tops.

Every Tree Fresh Dug

12 Bearing Size Apple Trees \$2.00

2 Baldwin	2 Wealthy	2 Delicious
2 Duchess	2 Red Astrachan	2 Northern Spy

12 Bearing Size Plum Trees \$2.00

2 Lombard	2 German Prune	2 Burbank
2 Bradshaw	2 Abundance	2 Shipper's Pride

12 Bearing Size Peach Trees \$2.00

2 Early Crawford	2 Champion	2 Niagara
2 Elberta	2 Carman	2 Belle of Georgia

12 Bearing Size Pear Trees \$2.00

2 Bartlett	2 Clapp's	2 Kieffer
2 Duchess	2 Seckel	2 B. D. Anjou

12 Bearing Size Cherry Trees \$2.00

2 Black Tartarian	2 Early Richmond	2 Montmorency
2 Governor Wood	2 Lambert	2 Dyehouse

12 Assorted Bearing Size Trees \$2.20

1 Bartlett	1 Delicious	1 Governor Wood
1 Duchess	1 Northern Spy	1 Montmorency
1 Seckel	1 Lombard	1 Early Crawford
1 Baldwin	1 German Prune	1 Elberta

We will make a special selection of any of the above collections picking the most perfect trees in our 5 year olds for \$3.00 each collection.

Boxing, packing and delivery to freight or express office free.

We will furnish all the above collections making a total of 60 trees for \$9.00.

No changes will be made in the above collection.

10% discount will be allowed from the above prices on all orders received direct from this notice with cash before March 20th.

We have but a limited number of these collections and when those are gone we can make up no more.

If you want to get in on this special offer you better make out your order now before you set this book down. If you don't you may be too late.

Little Trees at Little Prices

FOR EVERY PURPOSE

from Little Tree Farms

Birthplace of Little Trees That Live

Why you should buy trees and shrubs this year and why you should buy them early!

Before the war Europe supplied a large portion of the nursery stock used in America. That source of supply is now cut off. American nurserymen have curtailed production during the past two years. Consequently there is bound to be a scarcity of planting material and prices will be correspondingly high.

Be Forehanded—Save Money

Buy little trees now,—plant them out for borders and edging for your vegetable garden. Employ the Little Tree Garden idea and set the trees out without additional labor; they will require practically no care; they will add beauty and charm to your vegetable plot; and they will be increasing in size and value all the time.

A Little Tree Garden on Your Property means it is always planting season with you

How many times while walking about your estate have you thought "A little blue spruce would 'brighten up' this corner" or "A few shade trees right here would be just the place to swing a hammock this hot day," or "I wish that objectionable view on my neighbor's property was screened from sight," or "A mass planting of Japanese Barberry with its bright red berries would be cheerful in the fall and early winter," or "A privet hedge is just what I need on the front of my property," etc.? With a Little Tree Garden you can carry out these small plantings with your own stock when the spirit moves.

Sample Bargain Combination for Little Tree Garden

52 PLANTS FOR \$18.00

This combination is comprised of eleven very desirable species for American planting—all American-born and American-grown. Below are listed the varieties, sizes and quantities of each that make up the combination.

5 Silver (Concolor) Fir.....	1½ to 2 feet tall
2 Juniper; Red Cedar.....	2 to 3 feet tall
5 White Spruce.....	1 to 1½ feet tall
5 Blue (Colorado) Spruce.....	1 to 1½ feet tall
5 Red (Norway) Pine.....	1 to 1½ feet tall
5 Douglas Spruce (Fir).....	1 to 1½ feet tall
5 Arborvitae (White Cedar).....	1 to 1½ feet tall
5 Sugar (Rock) Maple.....	4 to 6 feet tall
5 Red Oak.....	2 to 3 feet tall
5 Japanese Barberry.....	1 to 1½ feet tall
5 Regel's Privet.....	2 to 3 feet tall

52 Plants for only \$18.00

This high quality stock has been twice transplanted and root-pruned. These prices include packing and delivery to the transportation company at Framingham, Mass.

2 of these combinations—105 plants—for \$ 34.00
10 of these combinations—525 plants—for 125.00

Send to-day for our new 1918 illustrated tree catalogue in which are listed twenty million forest, shade and ornamental trees.

Write for information; tell us under what conditions you wish to plant. We will help you select the trees and shrubs best suited to your conditions and your objects. Your letter making specific inquiry incurs no obligation and will have careful and prompt attention.

Little Tree Farms (NEAR BOSTON)
NURSERIES OF

American Forestry Company

Division A-1, 15 Beacon St., Boston, Mass.

"Every Vegetable available between Thanksgiving and Decoration Day is worth two or more gathered for consumption during the summer"

Editorial Quotation from Feb. Garden Magazine.

Exactly! That's the very thing we have been preaching since 1856. It's this old New England doctrine that caused us, years ago, to pay particular attention to rootcrops fit for storage. It's the very reason why Gregory's Special Strains of Beets, Carrots, Parsnips and Winter Squashes measure up to the highest expectations of most critical gardeners. Below we give a list of dependable stand-bys, and most heartily advise to

Grow More Root Crops and Vegetables for Winter Storage

Beet, Gregory's Strain, Edmonds Blood Turnip. Superior to all for winter use. Pkt. 10c.; ½ oz. 25c.

Cabbage, Gregory's Warren. A most popular sort for winter use, solid and great keeper. Pkt. 10c.; ½ oz. 25c.; oz. 45c.

Carrot, Gregory's Prize Danvers. The most famous of all New England carrots. Keeps well. Pkt. 10c.; ½ oz. 35c.; oz. 60c.

Onion, Southport Yellow Globe. The greatest allround yellow sort for winter use. Pkt. 15c.; ½ oz. 30c.; oz. 50c.

Parsnip, Abbott's Improved Hollow Crowned. No parsnip equals our prize strain of this variety. Pkt. 10c.; oz. 25c.

Salsify, Sandwich Island. A mammoth strain of this popular kind. Pkt. 10c.; ½ oz. 20c.; oz. 35c.

Turnip, White Egg. A great cropper of fine, solid roots of choicest quality. Pkt. 10c.; ½ oz. 15c.; oz. 25c.

Ruta Baga, American Purple Top. A long keeper, remaining in good condition all winter. Pkt. 10c.; ½ oz. 20c.; oz. 30c.

Squash, Gregory's Warren. Its fine, hard shell insures elegant storing qualities. Pkt. 10c.; ½ oz. 20c.; oz. 30c.

Squash, Symmes Blue Hubbard. More productive than any other strain of the ever popular Hubbard Squash. Pkt. 10c.; ½ oz. 20c.; oz. 30c.



Delivered Postpaid—Order Direct from this Adv.

Order at once, since seed supply of all these specialties is extremely short and will be exhausted long before end of spring rush. Note one of our window displays below showing many of our specialties.

Let Our Free Catalogue Help You

make the best of your 1918 gardening opportunities. Abounds with helpful hints how to grow vegetables and flowers and offers all worth-while kinds at reasonable prices. Mailed free. Write for it to-day.

J. J. H. GREGORY & SON, 1110 Elm Street, Marblehead, Mass.



Mothers, Fathers, Teachers

This Special Message Concerns All of You!

With the nation's needs for increased food supplies, the matter of directing the children's energy in the garden becomes fraught with possibilities. We are all agreed that garden work constitutes the best type of exercise for the children. Their young bodies, bubbling over with vitality, enjoy every motion needed to do the many little tasks—the sum total of which is gardening. To further the great work and to help you help the children, we have published a modest book which is *gladly mailed free* for the benefit of

The Country's Future Line of Defense in "School and Community Gardens"

Tells of the practical benefits to be derived from concerted gardening efforts. Discusses *practical* vegetables to grow, offers plans, gives unique planting tables. The demand for this book best explains its merit. The first edition was exhausted ten days after publication. The second edition is half gone, but we want every interested G. M. Reader to have one, if we have to print some more.

Weeber & Don Specially Priced Packets of Seeds for School and Community Gardens

are of the same superior quality as those contained in our regular sized packets, but they are put up with a view to two-fold economy. The average regulation seed packet contains more seeds than is needed for the short rows of the children's garden.

By careful calculation we have figured the amount of seeds required to sow a row of certain length as fully explained in above book. This will prove effective seed economy and enables us to sell the packets at the reasonable price of \$3.00 per 100.

The assortment is complete, from Beans, to Turnips. The most dependable sorts are available in each class. School authorities and communities should write for information. Page 14 of the helpful book gives complete list of both, vegetable and flower seeds available in this shape.

Have Your Name Put on Our Free Mailing List

From time to time we issue helpful literature in form of catalogues for different seasons. By all means, ask for your free copy of our Large Annual Catalogue, when writing for "School and Community Gardens." About June 1st, we issue a mid-season catalogue of strawberry plants, etc. Then, there is a Peony List and a Fall Catalogue, all of which will prove of interest to those who garden all season. Have your name put on our regular mailing list—and do it *TODAY*.



Weeber & Don

Distributors of "Sturdy Seeds"
114 Chambers Street, New York



Farr's Hardy Plant Specialties For Early Spring Planting

Year after year the hardy garden grows more charming and valuable as the plants increase in size and blooming power. Early spring is a desirable time for selecting and planting most perennials and shrubs.

In my comprehensive collection at Wyomissing may be found plants suitable for every phase of gardening. A few of these are here noted—to list them all would be impossible:

IRISES. An unusual and distinctive collection, including many novelties of my own raising (Awarded the Panama-Pacific Gold Medal).

PEONIES. The most complete collection of herbaceous and tree Peonies in the world.

Delphiniums, Phloxes, Chrysanthemums, Trollius, Long Spurred Aquilegia, Hardy Asters, New Astilbe, Roses, Dahlias.

New Japanese and Asiatic Shrubs. New cotoneasters, enkianthus, berberis, flowering cherries, corylopsis, etc.

Lilacs, Philadelphus, and Deutzias. A complete collection of Lemoine's new creation.

Dwarf Evergreens: Rare specimens for formal gardens, lawn groups and rock garden plantings.

A complete list of my collection of Hardy Plants and Shrubs will be found in

Farr's Hardy Plant Specialties

(Sixth Edition) 112 pages of text, 30 full page illustrations (13 in color). Most well-informed gardeners have a copy, but if you have not received it, or it has been mislaid, a duplicate will be sent promptly on request.

BERTRAND H. FARR
WYOMISSING NURSERIES CO.
104 Garfield Ave. Wyomissing, Penna.

Planning the Garden. So many have asked me to help them plan their gardens that I have found it necessary to form a special department in charge of a skilled landscape designer and plantsman. I will be glad to assist you in any way desired by off-hand suggestions or by the preparation of detailed plans for which a charge will be made.

Europe's Choicest Dahlias for American Dahlia Lovers

NEW DECORATIVES

Cream King, Frau G. Scheiff, George Walters, Futurity, Joffre, Mon. Lehrmand, King of Autumn, Leviathan (Eng.), Princess Mary and Warneford (the very best white).

Also the best of the new Peony flowered singles and Pompons.

600 VARIETIES

From 10c up to \$2.00 a bulb

12 of one kind for the price of ten.
20, my selection, for \$1.00
4 50c. ones, my selection, for 1.00
8 25c. " " " " 1.00
12 15c & 25c. ones, my selection, for 1.00

ENGLISH EXHIBITION CACTUS DAHLIAS—(NEW)

A. R. Perry, a large bold flower with incurved tubular petals. Color, old rose, tipped gold.

Fearless, one of the largest dahlias, if not the largest. Holds flowers up facing on stiff stems. The petals are very long, narrow and incurved, 9 inches. Color bright orange scarlet.

Lady Snathling, a dahlia of beautiful color. Deep salmon pink with golden centre, 8 inches without disbudging.

Phenomenal, a dahlia phenomenon. More like a Japanese Chrysanthemum than a dahlia. Flowers very large (9 inches). Petals long and ribbon-like and incurved to form a tangled mass. Color salmon with yellow at base and tips.

Search Light, the yellow Miss Stredwick.

Topaze, a dahlia of distinct and peculiar color, almost weird. Base of petals nearly white but soon changing to magenta, purple and rose blended.

Valiant, a giant flower of brilliant crimson carried on giant stems.

Washington, the flowers are very large and of pronounced incurved form, being both broad and deep. Color crimson.

Also the best of the new Hybrid Cactus.

50% discount on \$20.00 orders. 1/3 off on \$10.00 orders. 1/4 off on \$5.00 orders. Catalogue been delayed but now ready. Send postal first.

Have had a fine season for root growth and tubers all good size. Also have had a fine long blooming season, and clumps could be well labeled all true to name.

MRS. H. A. TATE DAHLIA GROWER AND IMPORTER
Old Fort North Carolina

Bobbink & Atkins



The Utility of Beauty in Winning the War

AS I sit at my office desk and look out over our nurseries, wrapped now in a blanket of snow, I have a feeling of impotent helplessness. I think of the active manufacturers, the builders, the captains of industry, the financiers, all alive, keen and alert, to whom it is given in these stirring days to create material things, to create fast and well—munitions and clothes and food. And I envy them. For what can we do with greenhouses and nurseries, Nature's simple products of beauty, to help win the war?

But as I pass along the sanded walks, through the warm, Nature-scented atmosphere of our greenhouses, I do not envy those other workers. For surely, right here in our own hands, is a *work* and a *duty* as great as any of theirs. Everywhere about me young green plants are growing, myriads of them, miles of them:—seeds just coming up, plantlets putting out their first leaves, buds forming, blossoms opening—everywhere fragrance and color and beauty—coming for Easter and for Spring.

Are not these God-given materials to work with? In a world strained with anxiety and tense in labor, are not these little plants of ours rays of sunshine and hope?

Faint-hearted nurserymen tell us that people are not going to buy trees and plants, shrubs and flowers while the war lasts.

We do not believe it.

Will *your* garden run to seed? Will weeds crowd out the blossoms along *your* walks? Will *your* lawn go uncut? *Your* roses tangle? *Your* climbers swing in the wind? *Your* hedge grow rough?

Will such conditions inspire *you* to do *your* best?

No, indeed!

Whatever these days are they are not slacker days—neither at work, nor at home. You are putting all your energy into business to *make your work count*. To your home you look for relief and rest. It is the one place where you must renew energy, take fresh courage.

And right here, it seems to Mr. Bobbink and to me, is where our share of the work of winning this war comes in. Never before have the trees and flowers and shrubs of our gardens everywhere in the country had so practical a work to perform—the work of keeping us up to our jobs, and helping us by their fragrance and color and beauty to keep fresh, hopeful, confident.

It seems, indeed, as though *our* years of labor in accumulating, planting, developing Nature's best and most beautiful products here in America for American homes and gardens, had all been simply to fit us for the wonderful opportunity, *now*, at this supreme time.

Let us utilize this Beauty for *you*, let us introduce it into your life and home and so together, *help win the war!*

FREDERICK L. ATKINS

WRITE FOR A COPY OF OUR
ILLUSTRATED CATALOGUE

Rutherford, New Jersey

VISIT OUR NURSERIES
8 MILES FROM NEW YORK

THE
GARDEN
MAGAZINE

MARCH, 1918

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LEONARD BARRON, Editor
Published Monthly, 25c. a copy. Subscription, Two Dollars a Year.
For Canada, \$2.35; Foreign Countries, \$2.65.
COPYRIGHT, 1918, BY
DOUBLEDAY, PAGE & COMPANY
GARDEN CITY, N. Y.
CHICAGO: Peoples Gas Bldg. BOSTON: Tremont Bldg.
LOS ANGELES: Van Nuys Bldg. NEW YORK: 120 W. 32nd St.,
F. N. DOUBLEDAY, President S. A. EVERITT, Treasurer
ARTHUR W. PAGE, HERBERT S. HOUSTON, RUSSELL DOUBLEDAY,
Vice-Presidents Secretary
Entered as second-class matter at Garden City, New York,
under the Act of Congress, March 3, 1879



America Declares War on Weeds

—War to the finish and no quarter. Weeds *must* go. You cannot afford to permit these enemies to take food from the mouths of your children. Weeds must make way to give your garden stuff the room, moisture and plant food essential to full development. The weapons which you need for this contest are inexpensive. With

IRON AGE Garden Tools

and a little enthusiasm, victory is assured. You can march right down the rows, pushing an Iron Age Wheel Hoe ahead and leaving up-rooted enemy hosts behind. There are many combinations and you can change the tools as often as you like. You can plow, rake, slice or cultivate the soil, according to the size, number and nature of the enemy. Clean out the weeds; leave no untaken "trenches" behind you; and you will win the war with weeds. Order your Tools at once.

Write for booklet, "Modern Gardening"

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We've been Making Farm and Garden Tools for 82 Years

Superb English Delphiniums

WE are tempted to say that the Improved English Delphiniums are the most beautiful hardy plants in cultivation, but we are also tempted to say this of a score of other things, and, of course, it is impossible to say which is the most beautiful of hardy plants, for they have such an immense variety of beauty that the wonder grows that people continue to plant, by the million, bedding plants which have little or no beauty, are an annual expense, and cost quite as much as hardy plants whose first cost is their only cost, and which increase in size, in beauty, and often in quantity, year after year. These Delphiniums may not be the most beautiful hardy plants, but they are among the most beautiful, and nothing can be more distinct and satisfactory. They are stately and picturesque, some varieties growing 8 feet high in rich soil; they have immense spikes of most beautiful flowers of every imaginable shade of blue, and their season is a long one; in fact, they will bloom from spring till fall if properly treated.

Culture of Delphiniums.—The culture of Delphiniums is exceedingly simple, and the results out of all proportion to the slight amount of care necessary. They thrive in almost any position. The soil may be a rich, friable loam, which suits them finely; but any soil, even hot and sandy, if well watered and manured will give excellent results. Dig deeply—trenching is better—add plenty of well-rotted manure, and plant about 2½ feet apart. Placed in lines, as a background to a border, or in groups of, say, three plants at intervals, the effect of the Delphinium is exceedingly fine. They look well in beds, also, arranged at the same distance apart each way. They are grand grown in masses of large groups of separate colors, and may be associated with shrubs with great advantage, succeeding well in shrubberies because of their robustness. They are most effective planted with white flowers especially with Miss Lingard Phlox or Candidum or Annunciation Lilies. A succession of flowers may be expected from spring to late autumn, especially if the spikes which have done flowering early be cut off; fresh growth will then be produced which will give blossom. Copious watering in summer will be attended by increased size of spike and flower; in fact, in seasons of prolonged drought, water is absolutely a necessity on many soils if the varieties are to exhibit themselves in their true size and beauty of flower and spike. Top-dressing is greatly recommended on certain soils, instead of the bare surface of the ground being left exposed to the sun. Some of the neater dwarf alpine and other hardy plants may be utilized to plant between and around Delphiniums. Coal ashes strewn over the crowns will protect the plants from slugs through winter and spring. As we have intimated, any garden soil suits the Delphiniums; it is, however, necessary to secure sorts such as are offered below in order to obtain an effect superior to that afforded by the old smaller-flowered varieties. No amount of liberal treatment will cause the smaller-flowered kinds of a few years back to develop into the gorgeous hybrids of to-day.



Specimen Plant of Improved English Delphiniums

SPECIAL OFFER OF IMPROVED ENGLISH DELPHINIUMS

Delphiniums have been a great specialty with us for twenty-five years and our stock is by far the finest in America.

Fine Mixed English , grown from seed of famous named sorts.	PER DOZ.	100
Selected Varieties , selected from thousands of seedlings grown from choicest named sorts.	3.00	20.00
Extra-selected Varieties . Each, 50c.	5.00	

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Chinense. A very pretty variety, with fine, feathery foliage and intense gentian-blue flowers in open panicles. 15 cts. each, \$1.50 per doz., \$10 per 100.

Chinense Album. A pure white form of the above. 15 cts. each, \$1.50 per doz., \$10 per 100.

Formosum. The old favorite dark blue with white centre; 3 to 4 feet high. Very vigorous, free-flowering, and one of the best. 15 cts. each, \$1.50 per doz., \$10 per 100.

Formosum Celestinum. Charming light blue variety of above; most exquisite shade of blue. 20 cts. each, \$1.75 per doz., \$10 per 100.

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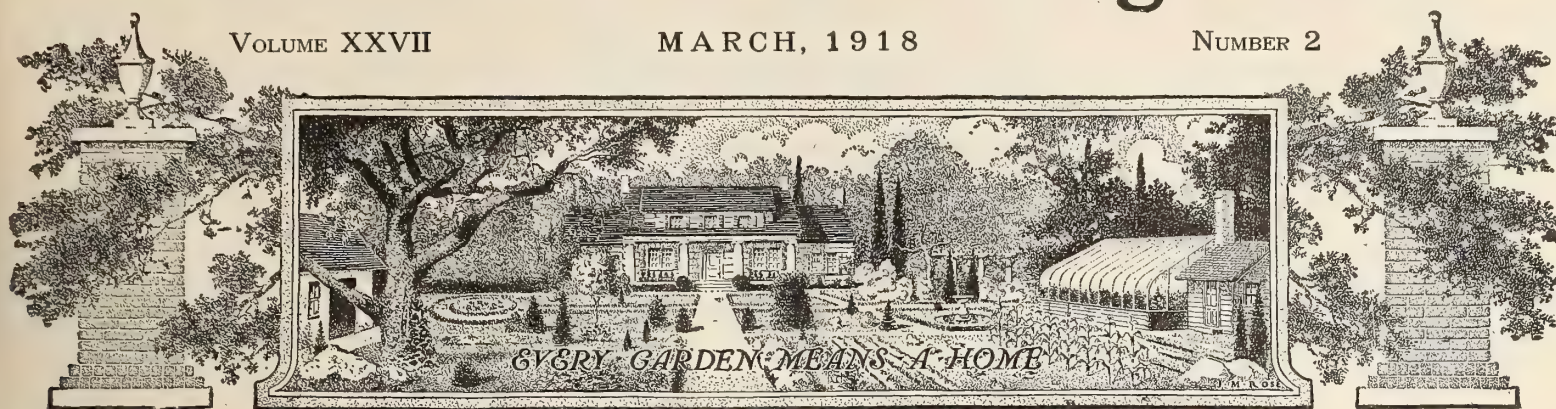
326 4th Ave., Pittsburgh, Pa.

The Garden Magazine

VOLUME XXVII

MARCH, 1918

NUMBER 2



AMONG OUR GARDEN NEIGHBORS

The Enemy at Our Door

A MOST insidious natural enemy exists at the very backdoor of every country and suburban home. It does not blast its way into our domain with noisy guns and powerful explosives, but lands silently, hugs the soil tightly, roots deeply. Its action is all the more to be feared, because it robs us of that which next to life and food, is our most valuable possession—soil fertility. That enemy is WEEDS!

Weeds are plants that don't belong. In ages gone by they fulfilled their mission of turning sterile soil into fertile soil, as successively dying generations added humus—plant food—to the barren surface of the earth. They also served as a ground cover, preventing the washing away of good top soil or the carrying away of the soil by high winds. But we of to-day have better, quicker methods of accomplishing these ends. Notwithstanding the contention of some idealists that weeds are good because "they keep us digging," *weeds must go and here is why:*

The cost to us, as a nation, of maintaining weeds, amounts to several hundreds of millions of dollars per year—a conservative estimate, says the U. S. Department of Agriculture. This loss takes the form of reduced crops, and increased or wasted labor. An acre of good ground yielded 60 bushels of corn under clean cultivation. The yield from that same acre, under weedy influence, was reduced to 20 bushels for the season. But, you will say, we do not *maintain* weeds! Not literally! But we suffer them to exist; we do not take them seriously; we do not fight them to a finish!

Weeds must go! They are injurious to the garden and to the crops, whether vegetables or flowers. They rob the soil of moisture, perhaps the greatest offense in the vegetable garden, since the largest part of every vegetable is water.

Weeds crowd the plants, particularly the seedlings, to such an extent as to shut out light and space in soil and air. The resulting injury is strikingly illustrated in the comparative size of the two alfalfa seedlings shown on next page. Both were born the same day in the same field. But one lived among clean, the other among weedy surroundings. The injury done by crowding weeds to seedling vegetables, is frequently such that subse-

quent development is never normal. A good start is half the battle of life.

Weeds rob the soil of plant food. With manure and all kinds of fertilizer at a premium, the nursing or suffering of weeds in the home garden becomes a crime. Remember that every ounce of useless weed growth reduces your crop of cultivated plants in a corresponding degree.

Weeds afford a haven of refuge to countless

numbers of insect enemies and plant diseases. You are bound to spray the cultivated crops if there is danger of losing them, but wouldn't think of wasting good spraying materials on a patch of weeds! Yet, those very weeds will carry the brood or fungi that will make things lively for your cultivated crops next season.

Weeds lower the quality of the crop, causing undersize, indifferent appearance, and even inferior texture and flavor. Certain weeds may give up substances that are injurious to the roots of the cultivated crop.

ARE THE FRENCH "ODD"?

"Aren't the French odd?" queried an observer the other day. "In spite of all their suffering and while they are yet in the midst of their agony they still hold their wonderful Rose show each year at La Bagatelle, and the French women, even the poorest, cherish their little window boxes and flower borders more than ever."

Odd? Was it then just a foolish and expensive habit—those window boxes in the cottages? Was the Rose show only a vanity show? Was John Fiske odd when he wrote "I often think, when working over my plants, of what Linnaeus once said of the unfolding of a blossom, 'I saw God in His Glory passing near me, and bowed my head in worship'; was Wordsworth odd when in the midst of the beauty of nature's garden he "felt a presence that disturbed him with a joy of elevated thoughts, a sense sublime of something far more deeply interfused"?

Well, perhaps; but we would rather believe that they are odd who cannot understand how God whispers to some of us from the hearts of Violets and Roses; who have not walked with Him in a garden; who do not know the sense of comradeship with Him that comes as we work with spade and hoe with the eternal forces of life in earth and air and sunlight. There is a spiritual solace in gardening and thank Heaven the French have it so abundantly.

We Americans are learning year by year more of the genuine value of that solace, but its riches have only been touched.

E. FRED EASTMAN.

Munitions of Defence

IT IS obvious that, in order to enjoy the full benefits to be derived from the garden, weeds must be fought with every means at our disposal. And please don't underestimate the seriousness of the struggle ahead. Nature has equipped most weeds with a wonderful constitution; some have roots that defy the attacks of men or beasts for years. Others bear seeds in enormous quantities through which to perpetuate their kind. Consider the wind-spread seeds of Dandelion! The common Wild Carrot bears 20,000 seeds per plant per year. Some Thistles are as fruitful. The Wild Mustard bears up to five generations of plants and seeds within five months.

The remedy lies in studying the kind of weed to be fought. Broadly speaking, we have annual, biennial, and perennial weeds. The annual weeds bear seeds the first year and then die. They are the easiest to subdue since all that is needed is to chop off the plant before it goes to seed. The roots will then die of their own accord.

Biennial weeds develop a strong root and plant the first year and bear seeds the second. Pulling them up by the roots the first year is the best way to dispose of them. If you cannot get the roots, cut off the flower stalks before seeds form the following year. Wild Carrot and some Thistles are typical of this class.

Perennial weeds may be eradicated by digging after the roots or by constantly cutting off the tops, which action will gradually starve the roots. But, in their case, as well, the effort should be made to prevent seeds from forming. One Dandelion plant gone to seed will do more harm than a dozen roots in a well-kept, closely cut lawn.

Fortunately there is a host of helps with which to fight the weeds. Besides the score of cultivators that will cut, up-root and destroy the weeds, there are special rakes, spuds, hoes, trowels and weeders galore. Not the least important implement with which to fight weeds is a good lawnmower, for it is only logical that a well-watered and fertilized lawn should prove an ideal breeding place for weeds. Keep the lawns cut; also keep walks and gutters clean for which purpose special chemical preparations are available that kill weeds very effectively. One unique weed-killing implement consists of two sharp knives attached to a metal tube loaded with a weed-killing fluid that is ejected as the knives cut off the plant.

Let's have more weedless gardens this year and ever after, for weeds are waste and waste is a crime; especially so when half the world is looking for us to provide food.

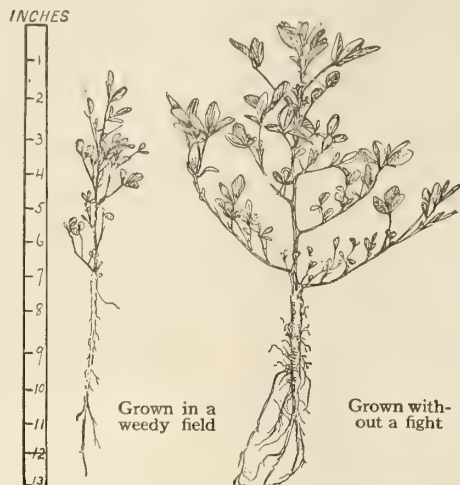
About Types in Root Crops.—That article of yours in January GARDEN MAGAZINE on the different types of vegetables was fine. But what is the difference in quality of long, half long and round root crop types respectively?—*C. B. Cranston, Columbus, Ohio.*

—Quality in root crops among vegetables differs considerably, according to soil and season in which they are grown. This affects all shapes alike. As a rule, however, the round type is the quickest to develop, but also the first to overgrow and deteriorate in quality. The half-long types resist heat and drouth better than the short, round types. The long types require the longest season during which to develop, but they also have the firmest flesh and keep best. However, the "law of compensation" decrees that the quality (flavor) in a root vegetable is best while the product is young. Never expect to find the succulent flavor of young beets in the long roots from winter storage—*Ed.*

An Improved Form of Bird Bath.—May I suggest what I think is a decided improvement and correction of the one fault in the design for a bird bath in "Among Our Garden Neighbors" department for December. The design, as shown, is good only for large birds. The water would be practically all one depth and small birds would be unable to stand on the edge and bathe, or find a place where they could stand in the water. As the ideal bird bath is one in which all birds may enjoy themselves I suggest that the basin, instead of having a practically flat bottom and straight sides, have a bottom that gradually slopes from the outer edge to the centre. Thus, no matter how deep the water in the middle may be, there will always be a place where even the smallest bird may make merry. Possibly a very shallow wooden chopping bowl would do for a farm.—*L. C. Burke, Madison, Wisc.*

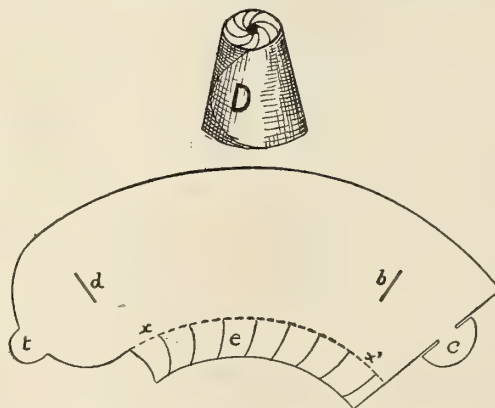
Surely Grow These Things.—I wish to remind you to again tell your readers to plan to put out onion seedlings. In this vicinity they may be procured at the green-houses in flats. Last spring I put out 150 feet and had three bushels (Prizetaker). They are so much easier to weed and of course require no thinning. Another thing not mentioned in January number is the French bean (green podded). They require an 8 ft. support but produce the whole season, thus requiring no second planting of beans but are the best of all for canning or drying. I used Carter's—*K. Sears, N. Y.*

We Always Aim to Hit.—In your February issue, you have, in my opinion, beaten your own record and in it you prove again your right to leadership in this field. The trade advertisements are always of great benefit; the editorials, excellent and instructive; "Facts About the Seed Supply," "Simple Talk for the Beginner" are excellent. Quite apart from their accuracy they are written in a concise and comprehensive style which covers the entire situation.—*A. L. Don, New York.*



The price we pay for letting weeds grow (see page 65)

Making Paper Pots.—These articles are very useful for starting seeds to be transplanted, rooting cuttings, strawberry runners, etc., and they are easily made at home. The accompanying sketch is self explanatory. These pots can be made with a sheet cut according to the drawing; the tenon *t* passing through the slit *b* and the notch *c* through slit *d* after having been folded. The parts marked *e* fold along the dotted line *xx* and overlapping one another, constitute the bottom of the



pot reserving the central hole at the bottom. These pots for shipment are very light and resist humidity. After they are made up it is well to soak them in a parafine bath which pastes the different pieces and makes the whole impermeable. It is suggested that it may be desirable to replace the parafine with a silicate of potassium. The exceedingly light weight of the paper pots and the consequent economy in the cost of shipment has been recognized for some time by many dealers, as paper pots are a regularly manufactured article and may be purchased if preferred.

Confusion in Catalogues.—You will perhaps remember that a year ago I wrote you a letter from the point of view of the customer who finds seedsmen's catalogues more confus-

ing than helpful, and you sent me a very sympathetic and illuminating reply. [We do—*Ed.*] I notice in the January GARDEN MAGAZINE an article which so completely supplies the information which I sought that it might almost have been inspired by my letter. This article is entitled "Your Seed Order and the Tangle of Varieties." It seems strange that no seedsman has ever tried to do this so clearly and simply as you have done it. I want to add my endorsement to the comments of Albert E. Fay upon sweet corn. I agree with him that Golden Bantam is far and away the best sweet corn I have ever eaten, much better than any of the white varieties. Even though the ears are small, the quality is so good that we now plant nothing else in our garden. Under the inspiration of Mr. Hoover's propaganda we put up a great deal of this corn, and we are now eating it with great satisfaction. We cannot buy any variety of canned corn which even remotely approaches it in flavor.—*Ernest Elmo Calkins.*

Discussing The Garden Magazine.—One evening I was looking through the January, 1917, number and also the December issue. The former is full of definite help and suggestions which cannot help but be of service if the reader will apply them. The latter gives a forecast of what we may expect during the year 1918, so you see I must have THE GARDEN MAGAZINE. I think one of the most valuable pages is "The Month's Reminder"—it truly is a reminder of things to be done. I have a lot 43 x 153 which I expect to plant this spring, and my seeds are ordered so as to be ready when the proper time comes. The pages "Among Our Garden Neighbors" are very interesting. There are a great many subjects brought up which I am not familiar with nor do I care for them, but I am expressing my individual opinion. My preferences are not the other person's, so publish all you can and everybody will find something of interest. Here are three cheers for the great American public which is going to do wonders the coming season in the way of growing food stuffs and not a little credit will be given your magazine.—*Ira DeMoss, Indiana.*

Quality in Sweet Corn.—I am a country physician seventy-eight years old, and have always been an amateur gardener. I always raise twice as much truck as my own family can use and usually give the surplus to my less fortunate friends or neighbors. I am especially interested in Mr. Fay's remarks about sweet corn, and agree with him in his restrictions as to the so-called white sweet corns. His only objection to Golden Bantam seems to that it is not sufficiently productive. Now allow me to say if it is treated in accordance with its nature there is little reason for this restriction. It should never be planted in hills, but always have one stalk in a place not closer than ten or twelve inches between stalks, and in rows three feet apart, and always in very rich ground. If so treated there will almost invariably be two ears on each stalk, and ears of sufficient size, it seems to me, to suit most persons. It is so incomparably superior to all white varieties, as well as to other yellow varieties I have tried, that I am sure quality amply compensates for differences in quantity. It well illustrates the old saw that "precious goods are done up in small packages."

The one trouble I have in raising sweet corn is the blackbird. Our little city is

almost a forest on account of the great number of shade trees, and this makes a fine nesting place for this bird. He is so fond of sweet corn that he does not mind the proximity of house or barn, and is always on hand at early daylight ready to pull up every stalk that is showing above ground. Who can tell me how to protect my corn from this rogue. He does not stop with this. If he perchance leaves any to mature, just as soon as it is in full roasting ear condition, with his powerful beak he will strip up the shuck and ruin it. Does any one know if saturating or covering the grains with tar when planting, will prevent this bird from pulling and eating the grain? I hope some one will help me in this matter.—*Dr. A. W. Foreman, Illinois.*

Plants Wanted.—Where can I procure growing specimens of the following for collections in my garden? *Anemone ranunculoides* (Yellow Anemone) *Gaylussacia frondosa*, and *Sorbus suecica* (*Sorbus scandica*).—*W. H. Meyer, Cumberland, Wash.*

Why Burn Insect Nests?—On page 189 of the January number, there is an illustration with printed legend: "burn out insect nests in trees, using a flaming torch on the end of a convenient rod." I take exception to this method for the reason that we often refer our students to *THE GARDEN MAGAZINE* and if in class they are taught "never burn insect nests in the trees, because of the injury caused to the tree," and then they go to the library and read, "burn them out, etc.," why—! The object in removing worms' nests from fruit and other trees is to get rid of the insects which are destroying the foliage; burning the nests may accomplish this but in nearly every case the tree is injured. A safer and more certain method is to wipe out the nest by hand, or by the aid of a cloth or brush. If it is not objectionable to the grower, the bare hand may be used, or an old glove may be worn; after the worms are in the nest, grasp the thicker part of the nest and pull it carefully and all parts of the nest, with the worms, will come; this may be dropped to the ground and stepped upon. There is a special wire brush on the market for this work, it is attached to a light pole and by twisting the pole a few times the whole nest is wound on the brush and is removed from the tree. Cloths on a pole may be used in the same manner.—*S. P. Hollister, Storrs, Conn.*

A Decidedly Useful Tool.—My favorite and most useful tool is an ordinary hoe with a rake handle in place of the ordinary hoe handle. I find the increased length of great



This method of vertical strawberry culture has its attractions in some conditions

advantage in reaching under scratchy bushes or vines, and especially for hoeing potatoes. In order to avoid packing the earth by tramping between the rows I always go up and down rows 1, 3, 5, etc., not stepping foot in the alternate row for the whole season, but with my long-handled hoe I can thoroughly cultivate in that untrodden row. Another thing I do is to always go the same direction in a given row. This bends the branches always the same way and lessens bruising and breakage.—*A. B. Fuller, No. Weymouth, Mass.*

Tub Gardening.—Any form of intensive culture is worth considering at the present time. The growing of certain plants in tubs is an interesting plan which should be revived. Wooden barrels are secured, and all around the sides holes are cut. The openings might be round or square, and should measure about five inches across, should separate from one another by eight inches. Bend round a piece of wire netting in the form of a tube, and place this in the centre of the barrel. This allows a free admission of air when the tub is filled with soil and prevents the earth from getting sour. Place a layer of broken crocks, several inches deep, in the bottom of the tub to assist drainage. As well, have the tub stand upon a few bricks so that its bottom is not in close contact with the ground. The soil should be a rich mixture of leaf mould

and loam with the addition of some gritty material. Select an open situation for the tubs so that the sun reaches all sides to the greatest possible extent. These tubs make pretty flower gardens for any trailing plants such as *Nasturtiums*, *Morning Glories*, and showy little annuals like the *Virginian Stocks*. But they assume a practical importance as aids to the fruit garden. This is the most satisfactory way of raising *Alpine Strawberry* crops. Strong plants put into the tubs in April bear two lots of fruit in the summer and fall. Indeed the fruit is produced until the coming of the frost. During hot dry weather copious supplies of water are allowed to the tubs as, if these have been properly formed, there will be a very free drainage, and the soil soon becomes dry. A vegetable crop that may be grown in the tub garden is the dwarf French bean and only one tub planted in this way will yield a large supply of material. It will help the plants if they are stimulated now and again with liquid manure.—*S. Leonard Bastin.*

Wintering Canterbury Bells.—*Flower Lover* (December issue), asks how to winter *Canterbury Bells*. Try my method: Start them early enough to have good large plants by winter, and transplant them when small into the permanent bed, having the bed raised two or three inches and rounded, so that water will not stand on it. Then protect by covering the bed with leaves, but *do not cover the plants*. Place the leaves around and among the plants and lay on sticks, cornstalks, etc., to keep them from blowing off. I have no trouble in wintering them in this way, but when I tried covering the *plants themselves*, well—in the spring they were not there! I have often thought if people knew how easy *Canterbury Bells* could be kept over, they would be grown much more, as few flowers make a finer show in the garden.—*F. W. Rice, Springfield, Mass.*

A New Cantaloupe.—Some years ago I began to experiment with the vegetables in our garden and to seek to produce new varieties of which I soon succeeded in securing several numbers. One of these to which I have given especial care originated with us in 1909. It is a cantaloupe, or muskmelon, and differs from anything yet introduced. This is a long melon and is quite similar in form to the muskmelon sold by different seedsmen as the *Banana melon*. It is unlike the *Banana melon*, however, in that it has well-netted skin and thick green flesh. The quality is excellent. I believe that I have a new cantaloupe that is equal to any on the market,



Talk about "Patriotic gardens" Here are our soldiers at work in their camps. The beginnings of a flower garden are seen on the right

and superior to many. It measures sixteen to twenty-four inches in length and from four to six inches is its largest diameter. I call it "Conservation."—*Mrs. E. Sefton.Mo.*

Yellow Tomatoes Have a Friend.—I find THE GARDEN MAGAZINE very interesting and helpful and hate to be without it. There are some opinions expressed, of course, with which I cannot agree, but generally speaking the advice offered will help any one who is doing anything at gardening. In the January number in the article on varieties of vegetables the writer in speaking of Tomatoes ends up by saying that Golden Queen is almost tasteless. I have never grown any of this variety until last year, probably because of a prejudice in favor of red or pink, but I must say that I found Golden Queen equal to if not better than any of the other varieties.—*J. B. Cannon, Ottawa.*

Hunnemannia from Seed.—The note of appraisal on the poppy wort in the December issue has brought forth a communication from the gentleman whose exhibit it was that induced Mr. Presby to try his hand. Mr. Schling in a covering letter to the Editor desires that his communication be published "Just as it is with the bottom line on." It is so ordered! Neighbors all, Mr. Max Schling speaks:

Hunnemannia to grow successfully, it doesn't mean only to buy seed from one house or the other house. One can buy the seed anywhere he wants as long as the seed is good.

When Mr. Frank H. Presby in Montclair writes in December number of THE GARDEN MAGAZINE that he seen at my exhibit Hunnemannia, and that instigated his desire to grow some, is something which I believe happens almost every week to some one else with some other kind of flowers seen at our place.

If Mr. Presby would have taken the time to call me up, I would have saved him fully three years of experiment, and he could have good flowers the first season. I don't mean to say that the first seed was good and the sowing was not correct, and I again don't want to say the second lot was not good and the soil was bad, but what I want to say is that no matter what seed is sown, it shall be sown at the right time to insure success, and the second reason for a good production is to sow the seed in the right way.

Most growers sow Hunnemannia or any variety of Esholtzia directly in the ground where the planting shall remain and bring flowers. I am one of the few who doesn't sow the Esholtzia in the place where it shall develop to bloom. I am one of the very few who doesn't press the ground down in the seed boxes. I never was unsuccessful with any kind of seed; but before I sow seed I make sure to buy my seeds from a house to whom I have confidence that I will get fresh seeds, and no mixture or no carryover seeds. If Mr. Presby would have gotten Schling's seeds with Schling's instructions, he would have had a good result the first year. I will sow my Hunnemannia in this way:

I fill a box with one-fifth sand, one-fifth loam, and three parts of leaf mould, finely sifted, the box full up to the rim. Level soil lightly with a strip of wood, and instead of press it down, I lift the box a few inches from the planting table and let it drop down evenly. I take the strip of wood which has a straightened edge and press the edge down very lightly, making lines into the soil about two inches apart. Sow my seeds in the rows evenly. Lift the box again up about two inches from the planting table, drop it down evenly, spray the soil thoroughly with a very fine sprayer which doesn't disturb the soil much, and cover it with glass. Within 10 or 12 days the little plants begin to come up. When the plants have developed the second leaves, I replant them in little pots, but instead of using broken pots in the bottom of the pots, I use small pieces of ordinary newspaper that hinders the roots to grow out of the pots, and by careful watering it still doesn't block the drainage. Before planting the young plants out in the ground where they shall go, I water them thoroughly then they lift easy out of the pots, and can be planted without the root being disturbed. By planting I possibly waste four to five per cent. of the plants on account of the balls, but I always had wonderful Esholtzia in and out doors.

In future Mr. Presby, in this open letter with the necessary information how to grow Esholtzia successfully without having to soak them over night in hot water, I would like to mention this, anything I have and anything I grow, I never make a secret out of my methods. I never have made yet a secret of anything in which I was successful, and you, just the same as everyone else, can come to me at any time and I will give you the necessary information. If it is growing of Esholtzia or Gerbera, or shall it be forcing of Ixia, or anything else, you always can come and ask Max Schling, regardless, and no matter what it is, and if it is something which I don't know, I will truthfully tell that I cannot tell you because my experience doesn't reach that far, but I will tell you where you can get the right information in the right way. And just the same as my knowledge is at the disposal of anybody else, it will be always at your disposal. Not for mercenary reasons, but out of love for flowers and for horticulture.

Is the South Disinterested?—Permit me please, to come in with a few comments on "December in the South" by J. M. Patterson of Virginia—were this comeback given place "Among our Garden Neighbors" probably the first question asked would be "who struck Billy Patterson." It is not my intention, however, to throw "bricks" at anybody, and as for throwing *snowballs* will say in passing, that "there ain't no such thing in south Georgia." I will not go so far as to state there is never any snow in the South. While I can but concede, and too, with pride that Virginia is a part of the South, it forms such a small part, the very topmost point, that from my viewpoint it is unwise, unjust, and to a great extent to the undoing of the South, to base Southern gardening operations from the vantage ground of Virginia. Neither would I have the Editor think that I am picking flaws with the management of THE GARDEN MAGAZINE, for I do believe that its policy is equality to all, partiality to none. The South should have a better showing in the magazine—though I firmly believe it is *disinterestedness on the part of Southern growers*, that we do not have this. In justice to Mr. Patterson, I wish to state that he is doing a good work for his part of the South (where the first average killing frost occurs about November 1st or 15th in autumn) but not for the whole South. In our section, the first average killing frost is about December 1st or 15th. The winter of 1916 was a rare instance of what King Cold can do to the South. At this date, December 7th, our gardens, our lawns and flower gardens, are green and gay with growing things and good things to eat. We seldom have a freeze deep enough to seriously injure Roses, shrubs, or winter

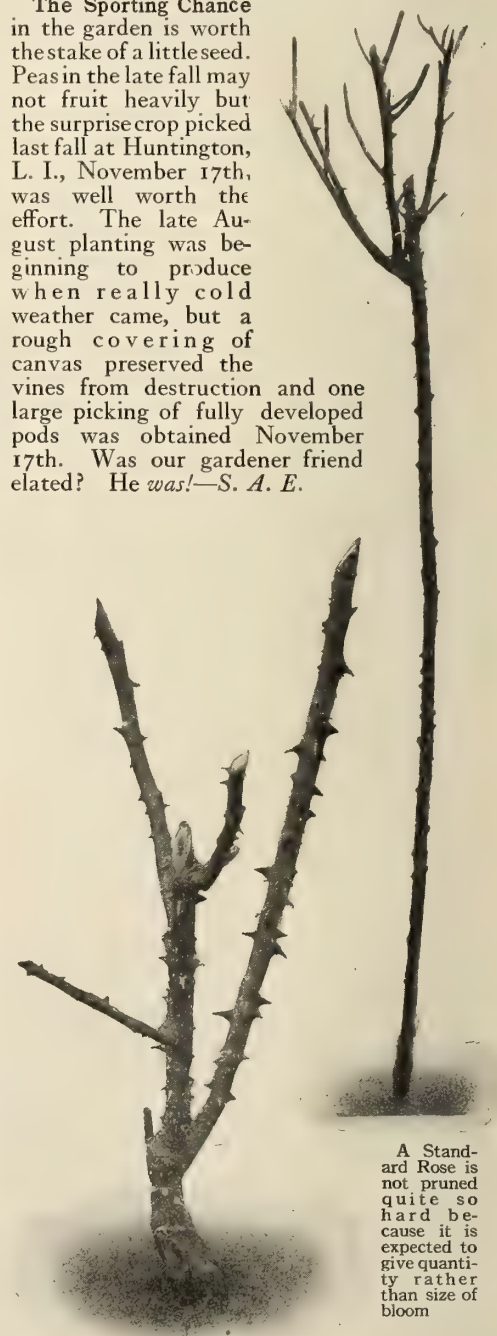
blooming plants. Violets, Christmas Sweet Peas, Pansies, English Daisies, Salvia, Verbena, etc., withstanding light frosts making the outdoor border gay with colorful beauty of bloom. Now for the benefit of those who may ask "who struck Billy Patterson," they will just consider the source—when they find out it was just a mere woman, an amateur at that, but one who wants, and is working for more enlightenment, enthusiasm and more interested individual workers in Southern gardening.

If I may I would like to tell the readers of THE GARDEN MAGAZINE what our little floral club has accomplished in the three years of its life. [Surely. Come along!—*Editor.*] Last but not least let me say that THE GARDEN MAGAZINE has been an inspiration to us in our struggling work.—*Mrs. A. H. Havenkoth, Valdosta, Ga.*

The Sporting Chance in the garden is worth the stake of a little seed. Peas in the late fall may not fruit heavily but the surprise crop picked last fall at Huntington, L. I., November 17th, was well worth the effort. The late August planting was beginning to produce when really cold weather came, but a rough covering of canvas preserved the vines from destruction and one large picking of fully developed pods was obtained November 17th. Was our gardener friend elated? He was!—*S. A. E.*



PRUNE YOUR ROSES! Here's the bush as it comes through from last year. See other figure



A Standard Rose is not pruned quite so hard because it is expected to give quantity rather than size of bloom

PRUNED FOR BUSINESS. This is a good illustration of pruning for fine flowers

THE MONTH'S REMINDER, MARCH, 1918

The purpose of the Reminder is to call to your attention the things which should be thought about or done during the next few weeks. For full details as to how to do the different things suggested, see the current or back issues of THE GARDEN MAGAZINE. (An index of contents is prepared for each completed volume, and is sent gratis on request. The READERS' SERVICE DEPARTMENT will also cite references on any special topic if asked—that's its job.) To get the full benefit of this, check off with a pencil—in the square provided for that purpose before each paragraph, the items that apply to your own case, and use the page as a reference list.

DON'T be too impetuous! An over-early start gains nothing. Unless you are an exception to the rule, you can use the bad days in March just as profitably in completing your preparations as you could in beginning actual operations out of doors.

In the Vegetable Garden

GET manure on the ground as quickly as possible; spread it evenly, break up all lumps; don't wait until ready to plow or spade.

☐ Be wise in time and order your supply of chemical fertilizers now.

☐ Don't be in too much of a hurry to work the ground. If it is plowed or spaded while still wet, it may be injured for several seasons to come. As soon as ground is dry enough to work, plant first early things, regardless of temperature; these include ☐ onion sets, ☐ round peas, ☐ asparagus and ☐ horseradish roots, ☐ beets, ☐ turnips, ☐ onions, ☐ spinach, ☐ lettuce and radish.

Make the first plantings of seeds very shallow: also, sow seed very thick as germination will not be as good as later.

To get the earliest and surest results, use plant forcers both for individual plants set out, such as cabbage, lettuce, cauliflower; and for vegetables planted in rows, such as beets, lettuce, and radishes. After these early crops are well started, the forcers can be used the second and the third time for later vegetables.

☐ Get ready for use next month, bean poles, brush for pea supports, tomato poles, etc. ☐ Also put in stakes and labels where vegetables are to be planted later.

☐ Remove parsnips and oyster plants from the ground as soon as possible; store the surplus in a cold cellar or cover with soil and thick mulching on top of frozen ground, in a shaded place.

In the Flower Garden

REMOVE mulch from hardy perennials, bulbs, and flower beds gradually, a third or so at a time, so as not to keep the plants in cold storage too long on the one hand, nor to make them make a tender growth under the mulch on the other.

☐ Clean up and burn all remains of last year's plants! Most diseases and insect pests are carried over in the refuse of old stalks, fallen leaves, etc. ☐ Cut the old stalks off to within an inch or two of the ground—or if they are loose, remove altogether.

☐ Begin work on edges of walks, and borders, as soon as possible. ☐ Save time this year by getting a regular edging machine for this purpose. ☐ In trimming the edge, do not cut back too far to get even lines. A deep cut invites injury from wagons, wheelbarrows, trade carts, and the sod dries out.

☐ Make use of roller on edges and borders, especially when the ground is still soft and wet, as it keeps them even and discourages mold.

☐ As soon as the new growth begins the roots will be looking for an abundance of plant food—fine ground bone spaded in or raked about plants, washed down to roots by the spring rains, will enable them to make a quick, strong growth.

☐ Transplant perennials early; don't wait

for growth to begin. ☐ Fine, well rotted manure and bone should, of course, be mixed with the soil before plants are re-set or transferred.

The first things put into the ground outside from seed, should be Sweet Peas. ☐ A trench should be dug out eighteen inches or more in depth and a dressing of the best manure obtainable, put in the bottom to the depth of at least six inches. ☐ Replace the best of the soil, and make a second application of bone fertilizer. A little dried blood or tankage worked into the surface will help to produce the best Sweet Peas you have ever had. Do not plant seed too thickly; to make sure of getting the best results possible, inoculate with one of the reliable bacteria cultures.

If you are setting out many new perennials, fruits, and things of that kind next month, ☐ get the ground ready in advance by thorough spading, generous applications of bone, and manure or commercial fertilizer so that these things may be planted immediately upon receipt. Remember that the hardest varieties of seed should be slightly filed or notched—being careful not to injure the eye—before being planted.

In the Greenhouse

☐ **MAKE ROOM!** Overcrowding in the greenhouse in March and April is the cause of poor plants. Much extra space can be obtained temporarily, however, by using post and rafter shelf brackets, utilizing many corners under the benches, etc. Get this extra room ready in advance.

☐ Go over all greenhouse benches and discard all plants that are not actually needed.

☐ Transplant early! Part of the secret of getting strong plants is in never allowing the little seedlings to get big enough to crowd.

Keep as near as possible to glass after transplanting and give plenty of fresh air.

☐ Pot up cuttings while roots are still short, if the cuttings are not rooted evenly, go over them and pick those which are ready and replace the others if desired.

Don't let growing plants in pots crowd. If they are not quite ready for repotting change them about on the bench to prevent their rooting through, and to give them more room. Loosen up soil on top and remove any small weeds which may have started.

☐ Pinch back young growing plants. Plants that have become spindling should be pinched out in time to form a good branching, stocky specimen. If they have become too tall, it may be necessary to cut them back a third to a half. Top cuttings may be made of any variety which it may be desired to increase—but they must be handled carefully, as they are likely to be a little soft.

☐ Start late vegetables such as tomatoes, eggplant, peppers, etc. now, to follow the lettuce, beets, cabbage, etc., started last month. ☐ Give them ten degrees more temperature if possible. ☐ Celery should be grown "cool." Celery seed is very fine and slow to germinate and should be soaked until ready to sprout before planting and then covered very lightly.

For best results, pot up vegetable plants.

For the home garden it is not very much work to pot up even such things as cabbage and lettuce in two inch paper pots. Tomatoes, peppers and eggplants if transplanted once to pots and then put into four or five inch square paper pots will give plants with the first formed clusters of fruit already set by the time they are to be put into the open, and they can be transplanted with less danger of frost than in setting out plants from the flats in the old way.

To get quickest, surest results with Dahlias, Cannas, Caladiums, Tuberous Begonias, etc., pot up the roots already started as described last month. These, also, may go into a rich compost in paper pots.

☐ Keep flowering plants well fed. Fine bone meal worked into the soil and nitrate of soda as a liquid manure, will do wonders to bring up flowering plants in pots or in the bed which have begun to "lag."

The Frames

COLDFRAMES and hotbeds should be "warmed up" now, with all the sash thoroughly repaired and in place and everything ready to take the overflow from the greenhouse, or the plants started indoors and ready to transplant now.

☐ Ventilate daily! Only on the stormiest days should sash be left down tight.

Watch watering carefully. Water according to the condition of the soil, not by rule of thumb. The plants may not need watering for several days in cloudy or in stormy weather.

☐ Set out or sow vegetables, such as lettuce, cauliflower, beets, radish, carrots and onion sets for earliest spring use. These may be planted a third to a half again as close as they are usually put out of doors. ☐ Sow seed thinly—conditions for germination are much better than out-of-doors.

Make additional temporary frames if crowded for room. Any old boards put together so that they will give the plants head room and form a support for the sash will answer the purpose. Glass storm sash are not needed; frames covered with cloth or muslin will do.

The Rose Garden

LATE this month, remove the mulching from the hardy Roses.

☐ Prune rugosas as soon as possible. Old canes should be cut down clear to the ground. The others may be allowed to grow for length or cut back, as required, if a formal or semi-formal hedge is wanted.

☐ Prune the hardy garden Roses, Rugosa Hybrids, and Hybrid Perpetuals as soon as severe freezing weather is past. The Tea and Hybrid Teas should be left until later. In pruning, remember the more severely you cut the plants back, the better flowers you will have. If a great quantity of bloom is preferred to size, prune less severely.

☐ Begin cultivation as soon as the ground is dried out enough to work without being sticky. A good dressing of bone meal should be worked into the top soil and forked in around the plant.

Plant dormant Roses as early as possible. If you expect to use dormant roots, be ready

to plant them as soon as they are received. Follow the directions sent with the plant carefully, cutting back straggling or broken roots and, after planting, cutting back the top branches to stubs of three to five eyes each.

In The Cellar

GO over all vegetables and fruits that may be left and remove at once all those that show any sign of decay. Watch your chance to leave ventilators open for a

few cold nights and, then as warmer weather comes on, keep all openings tightly closed.

□ Make a general clean up and be prepared to give good whitewashing as soon as the last things are used.

In The Tool House

ALL in order? Get every tool in order and every piece of garden equipment in shape, and ready to use at a moment's notice.

□ Every one should be sharpened, oiled and

adjusted for the kind of work it will first be required for this spring.

□ Provide a box of soft grease for rubbing over the blades or other working parts of tools that are not frequently used; rust wears out more tools than use, ten times over!

□ Are all new tools and parts ordered? Order them *now* even if you don't need them until next July.

□ Same applies to supplies of sundries, including labels, pots, fertilizers, insecticides, etc.

Putting it' Simply, for the Beginner

MAKING HOTBEDS AND COLDFRAMES—SOWING SEEDS—WATERING

SOWING seeds is so easy that it is really surprising that anybody should have any failures, providing the seeds are of good quality. Of all the details in handling and growing plants it is the most mechanical. It is only justice to the seedsman, however, to add that the seeds are rarely at fault and most failures can be charged to the operator.

Making Every Seed Count

FOR the early start and to have plants of certain things to set out in their season it is desirable to sow seeds "in heat"; that is to say indoors or in a hotbed. For this purpose boxes or pans about 3 inches deep with openings in the bottom to permit drainage are used. Boxes are better because all the sowings required for a small garden can be made in a couple of boxes that measure 12 x 24 inches; boxes also have the advantage of not "drying out" so rapidly as pots or pans where the air circulates around them freely as the atmosphere in the dwelling is usually so dry that evaporation is very rapid.

DRAINAGE as referred to above is essential, not for the seeds (which require abundant moisture to soften the outer shell and burst the jacket), but for the young plant immediately it has taken root. The rootlet and sprout appear simultaneously and if the box be not drained "damping off" will cause trouble. A medium that will allow the water to pass through freely must be placed in the bottom of the seed box; it matters little what you use—sifted cinders, clam shells, coarse screened gravel, or anything of that character will answer the purpose. On top of this drainage in order to prevent the soil from passing through and clogging up the openings, poor coarse manure, salt hay, or excelsior may be used.

SOIL for seeding purposes must be of good "texture"—i.e. loose and friable. As a test take a handful of soil and squeeze it in the palm. The soil particles should adhere so that when pressure is released the mass of soil remains compact giving a perfect mold of the hand, yet when a little pressure is applied it will crumble into a loose mass. If the compost is too light or too dry, it won't hold together; if too heavy or too wet, it won't break apart. In the former case add some heavy garden soil; and use sand to correct heaviness.

Young seedlings do not need a soil rich in plant food as the tender roots "burn" if they get into contact with rich soil or manure.

Fresh manure will burn always and for that reason before the boxes are filled the soil should be screened to remove any manure that it might contain.

A GOOD formula for a seed sowing soil is equal parts leaf mould, sand and soil from the garden, screening each separately through a $\frac{1}{4}$ inch mesh screen. Then mix thoroughly, by turning several times.

Filling the Boxes

THE prepared compost is used to completely fill the box; this when firmed by pressure will give the proper depth below the sides of the box. This is best done by the fingers of the two hands slightly spread, much as in operating a typewriter. Lack of proper firmed will result in failure, a box left loose and spongy will not drain properly, and on the other hand, if too firm or hard the soil will "bake," but this rarely occurs; the proper consistency is when a pencil point forced into the soil and withdrawn will leave a clean opening. After firmed the surface should be smoothed and pressed perfectly flat and even with a seed tamp or the bottom of a glass tumbler (See illustrations in last month's GARDEN MAGAZINE, page 15).

Sowing the Seeds

SOW in drills in the seed box about 2 inches apart or scattered broadcast over the surface. The latter method is preferred because it distributes the seeds more evenly and so gives room for the young plants. Beginners usually sow the seed too thickly which induces "damping off." Sow thinly. The ideal is for each seed to have at least $\frac{1}{2}$ inch space. Press the seeds into the surface of the soil with the bottom of a tumbler, a piece of board, or other flat surface. Then cover—about twice the depth of the seed is the usual procedure. This may seem like a task for a microscope and delicate mechanical instruments, but it is comparatively easy if you take an old flour sifter or a piece of fine mesh metal mosquito netting, held above the seeds and forcing the soil through with one hand. Again firm the surface after covering by using a smooth faced tool and water carefully with a fine rose or bulb sprayer to prevent washing the seeds. There is no particular advantage in using tepid water until after the seeds have germinated; then, however, the water should be about the same temperature as the air of the room, and watering may be done by covering the box with a piece of cheesecloth, and a small piece of paper placed just where the water strikes.

Watering Young Plants

NO FIXED rule can be given as to watering, it depending entirely upon the soil used, the temperature maintained and other matters that control evaporation. The general principle is to not keep the box too wet, letting the surface get a little dry at times. *Where one plant dies of thirst there are thousands destroyed by "damping off,"* which is a parasitical disease induced by overwatering, but can also be caused by overcrowding (which produces similar conditions). If the seed boxes are placed in a window where they have full sunshine, and where a night temperature more than 55° is maintained the seeds will very likely need watering once a day. In case of sowing made a little late, or with slow germinating seed, which it is desired to hurry a little, a glass can be laid over the seed box, thus enclosed a high temperature is induced. The glass should be removed when the seedlings show above ground.

Making Hotbeds

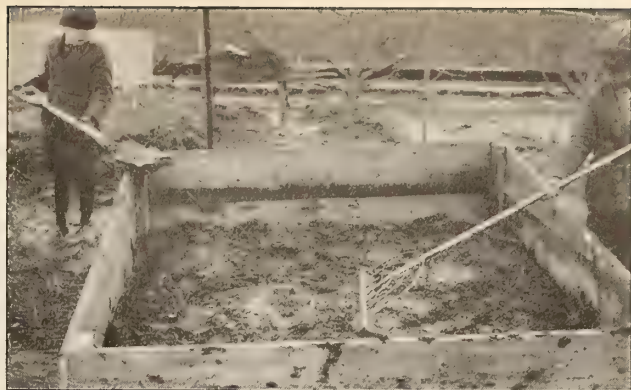
THE difference between a hotbed and coldframe is that the former is heated artificially. When heated by pipes from a greenhouse or garage they are termed "heated frames." The term "hotbed" is generally applied to frames heated by fermenting manure; and they are of wonderful assistance to the garden in getting an earlier start and moreover the plants will attain a higher degree of development because of the early start.

The size of hotbed should be governed by the size of the garden. A two sash hotbed approximately 6 x 6 ft. is a very good size for home gardens not more than 50 x 50 ft, where they are used only for early starting of such plants as cabbage, lettuce, cauliflower, for setting out in the garden when the weather is favorable.

Fresh horse manure is necessary in the preparation of hotbeds. Manures that have decayed are not good for this purpose, as the natural heat of the manure is lost. The frame should be excavated about 16 inches deep, measuring from the top of the front; about 8 inches of manure is then placed in the frame and firmed by tamping. In making hotbeds in fall for use over the winter from 2 to 3 feet of manure will be necessary; but for spring work 8 inches is sufficient. The glass surface is protected at night with straw mats or leaves or hay. On top of the manure place about 4 inches of good garden soil and when this is firmed and properly smoothed off, the frame will be ready for sowing seed; but don't fill the entire space as only about one-half of



1. Fresh stable manure about one foot deep is used to give the necessary heat in a hotbed



2. Then about six inches of soil is spread, firmed by the feet, and smoothed by a rake



4. Make all firm after sowing by pressing with back of wooden rake. Water with fine rose



3. For making drills use a straight edge and label, or the handle of the hoe



6. Let the seed box, or flat, be 3 in. deep. Put in a layer of rough drainage broken pots, shells, cinders, etc.



5. Bank hot manure around the outside of frame during cold weather



10. Sow the seeds in shallow drill or broadcast and label with name and date. Cover the seeds very lightly and make firm

The Garden Movies No. 3

EXPOSING THE MYSTERY OF MAKING A HOTBED
FOR AN EARLY START OF SEEDS "IN HEAT"
—FILLING A "FLAT" AND PROVIDING
THE "DRAINAGE" TO MAKE
THE COMPOST SWEET

(Photographs by W. C. McCollom)



7. Cover the drainage with coarse litter to keep the compost from washing through



8. Put in the soil level to the top and work down with finger pressure



9. Tamp firmly and make even with a flat piece of wood



11. When the young plants can be handled "prick off" to give more space

one sash will be necessary for seeding purposes. The rest of the space will be needed after the seeds have germinated, when they will require more room and must be transplanted. Sowing seeds is done exactly as recommended for sowing in boxes. Ventilate freely, on fine days and even on cloudy days a little air should be admitted, as the hot beds are full of ammonia fumes from the manure. Here again underwatering is preferable to overwatering. With underwatering the plants always show distress signs before any serious damage is done.

Quantity and Spacing of Seeds

WHAT seeds are you going to sow? It is preferable to temper your ambitions with judgment, and not attempt more than it is possible to accomplish. The plants that should be started in the frame or dwelling now are cabbage, cauliflower, lettuce, and tomatoes; if you have room include celery, onions, leek, eggplant, and peppers; and where plenty of room is available such as a greenhouse or unlimited frame space, add beets, carrots, parsley, French Globe artichoke, and corn in pots.

The quantity of seeds depends upon the size of your garden. You must decide whether you want to set out 50 early cabbages or only 25. There is no sense in raising enough lettuce plants for the neighborhood, and not having any tomatoes for your own. One ounce of cabbage and cauli-

flower will produce 3,000 plants; one ounce of celery and lettuce seed will produce about 5,000 plants; an ounce of tomatoes, onions and leek will produce about 1,500 plants each. One packet of seed of any of the above is all any person would require for early seeding in the home garden.

The spacing of the seeds is easy to arrive at. Let us take lettuce for example: You want 50 plants. That will take about 12 inches of drill or about 12 square inches to start the seeds; the young seedlings when transplanted should have 2 inches of space each way which means a minimum of 100 square inches to accommodate 50 plants. Twice this space would be better if you can afford the room. Tomatoes, celery, cabbage and cauliflower will require about the same spacing, and in practice this can be taken as the spacing for all seeds started in the frame or dwelling.

Handling After Starting

WHEN the seedlings have made their first character leaf they should be transplanted where they will have more room to develop. If this be done in the window of the dwelling boxes will serve the purpose very well. It is better to have a separate box for each kind of plant; because not all kinds will be ready for planting outdoors at the same date; tomatoes and cabbages, for example. The former must wait for warmer weather.

The soil to be used in these boxes should be the same as was used for sowing with about 20 per cent. well rotted manure added. In frames a space is made ready by proper smoothing and marking off with lines where the young seedlings are to be planted.

Lift the young plants by forcing a trowel underneath and prying up which will keep the roots intact. They should have been well watered a few hours before this to avoid breaking of the roots when separating the seedlings.

To receive the new plant make a hole about 2 inches deep with the point of a lead pencil or a sharpened stick, drop the seedling root straight down, holding the young plant between the thumb and forefinger of the left hand, press the soil, against the roots by pressing the dibbler in the soil about $\frac{1}{2}$ inch from the seedling and prying over. The watering, which should be done immediately, will fill the hole and will settle the soil around the roots.

Shade for a few days after transplanting; but this must not be overdone, in fact total shade for one day is all that is necessary, the second day just a few hours in the middle of the day, and on the third day just around noon. Remember, there is more danger in growing plants too warm than too cool; too much water is much worse than too little; and too much air is better than not enough.

Newer Climbing Roses of Merit E. I. FARRINGTON

LARGE FLOWERS, BETTER COLORS AND CLEAN HEALTHY FOLIAGE ENDURING WELL INTO WINTER CHARACTERIZE THE MODERN TRELLIS ROSE—AMERICAN RAISED ROSES FOR AMERICAN GARDENS

FOR a long time the average man chose the Crimson Rambler as a matter of course when he wanted a Climbing Rose, and it is largely planted, even now, although there is no excuse for growing such an inferior variety when Excelsa is just as available. Even after the hybridizers had turned their attention to the Climbing Rose amateurs were very slow in accepting the improved sorts. It was twelve years before the splendid American Pillar Rose acquired anything like widespread recognition.

But this is all changed now, it would seem, and the Climbing Rose has come into its own. The chief difficulty now is in keeping track of the new varieties, so rapidly is the list being extended through the efforts of enthusiastic Rose specialists. Yet some of the newer kinds are so exceptionally fine that they cannot be overlooked. Excelsa, already mentioned has been out for several years but is the best of the red Rambler class, although it may be necessary to say this with a reservation, for W. A. Manda's Dazzling Red now on trial at the Hartford park may be as good, although that is doubtful, judging from last season's reports. At least, there will be no lack of good red climbers in the future



MARY LOVETT ROSE, aptly described as a white flowered Dr. Van Fleet, is another triumph of the successful hybridist Dr. Van Fleet

and of varieties that are "clean" all through the season, which certain older ones were not.

The Climbing American Beauty is already fairly well known, its name alone being sufficient to win its trial by amateurs to whom the American Beauty is the Rose by which all other sorts are measured. It is very fragrant, very showy and a splendid Rose for garden work, although possessing one distinct disadvantage in the fact that it holds its old petals until they have become faded and washed out, giving the bush an unkempt and depressing appearance unless the flowers are kept trimmed off. Hiawatha has much the same habit and the grower should make up his mind that he will need to use the scissors freely when the blooming season is over. Hiawatha, though, is well worth growing, for its brilliance is a revelation to those who have never seen it in flower. The flowers are single, ruby-crimson on the petals but white in the centre, with anthers a rich golden yellow. The plants blossom freely from the time they are small bushes and make a good, strong growth, which is of the rambler type and the flowers are retained until late in the season.

Probably most rose growers will agree that Dr. Van Fleet is the best of the pink climbers recently disseminated. Being a Wichuraiana hybrid—the other parent being Souvenir du Pres. Carnot, it is practically immune to mildew, while the foliage is large and glossy.



PURITY ROSE. A twin sister of Christine Wright has white flowers and a grace of habit that captivates attention

The pale pink double and fragrant blossoms are very handsome, both in the garden and when cut.

At the national flower show in Philadelphia and also at the New York show the silver medal offered by the American Rose Society for the best new Rose was awarded a clear, bright sport of Dorothy Perkins which was exhibited under the name of Elizabeth Ziegler in honor of a daughter of William Ziegler, Jr. of Connecticut. This Rose forces with better color than Dorothy Perkins, which will make it popular with large growers, and it also gives promise of being a distinct acquisition for garden culture.

Christine Wright has the bright pink of the Wild Rose, grows well and has large, dark green foliage. It comes from a cross between the popular Caroline Testout and an unnamed seedling. The new seedling America also has the charm of the Wild Rose in its dainty pink coloring, shading to white. It is exceedingly free flowering, judging from its blooming habits at Woods Hole, and has the special merit of holding its flowers in good condition for a long time. It makes a very strong growth and seems to be perfectly hardy, as well as resistant to mildew. It is a promising novelty.

Daybreak is a pretty little pink Rose originated by the late Jackson Dawson, and I think that no one now living knows its parentage. It is not at all well known as yet, but is an exceptionally good Rose to train on walls and fences, being perfectly hardy and making a vigorous, even rampant growth. It is decorative in the house, too,

Purity, which won the silver medal at the Hartford test garden in 1916. The Purity Rose was one of four fertile seeds from the crossing of an unnamed pink seedling with Madam Caroline Testout. One of the seedlings was Christine Wright, which has already been mentioned as a new pink variety, and another was Purity, which, as the name implies, is pure white. Having no Cherokee blood, it is somewhat harder than Silver Moon and seems to have about every merit that could be desired in a white climber. Its general appearance is shown by the accompanying illustration.

Mary Lovett is another creation of Dr. W. Van Fleet, whose name has been given to a pink Rose already described. Perhaps Mary Lovett might be properly called a white Dr. Van Fleet, although its popularity will never be quite as great probably, for the Van Fleet was introduced just when the time was ripe for an extra good soft pink climber. Mary Lov-

when used in a mass.

No white climber had met with special favor among amateur rose growers until Silver Moon was distributed, but something about the aptly chosen name seems to have appealed to the public imagination and many plants of this new and really beautiful Rose have been set out in small as well as large gardens. Silver Moon is a Wichuraiana cross, but has considerable Cherokee blood, which it might be assumed would make it a little tender. Yet I know of plants near Boston that have already gone through three winters. The flowers of this Rose are remarkable for their size, often being four and a half inches in diameter, and the bright yellow stamens which fill the centre make a fascinating contrast to the silvery white of the blossoms. The large, glossy green leaves carried until late in the season make this a very useful pillar and pergola Rose even when it is not in bloom.

An even finer white climber, though, is

ett Rose is a hybrid of Kaiserin Augusta Victoria and the hardy wichuraiana, with the natural result that it is well nigh mildew proof and free from most other fungus troubles. The flowers are large, pure white and borne on long stems, making them highly desirable for house decoration. This Rose blooms to some extent in the fall as well as very freely in the Spring and the foliage is ornamental all the season.

Yellow Climbers, like yellow Bush Roses in general, have never found as much favor as some of the other varieties, perhaps because so few really good sorts have been produced. Yellow Roses are likely to be too white or else poor in form, but Aviateur Blériot which seems to be an improved yellow Rambler has good color and is considered as hardy as Dorothy Perkins. The flowers are double and borne freely in loose clusters. This will probably be a popular Rose, yet it is doubtful if it will supercede the older Gardenia, which is really a fine yellow Rambler. Another new yellow Rose which is being reported on very favorably in different parts of the country is Professor Sargent, a fine, free flowering climber that is showing up well wherever planted.

Alberic Barbier is a yellow Rose which is very easy to grow and seems to flourish in almost any fairly sunny situation. It is a good variety to grow on fences and over summer houses, and is free from mildew, but it is almost too light colored to be wholly satisfactory for intimate acquaintance. Goldfinch is a fairly recent English Rambler with good foliage and semi-double, lemon yellow flowers borne in clusters.

A particularly interesting new climber and one that is attracting considerable attention, especially among lady gardeners, is Wich-Moss, a pretty hybrid the parentage of which is indicated by its name. The Moss Rose Salet was chosen for the cross with the hardy R. wichuraiana and the result is what is practically a Climbing Moss Rose. The color is a light pink when the flowers first open, the reverse of the petals being a darker shade. The blossoms are sweetly scented and the mossier upon them is very attractive. The bush makes a fairly vigorous growth and while Wich-Moss is not showy, it is a delightful addition to the list of newer Climbers worth getting acquainted with.



WICH-MOSS ROSE, the origin of which is clearly set forth in the name, is in effect a climbing counterpart of the old time Moss with shiny foliage

What's New in Vegetable and Flower Seeds?

REVIEW OF THE TRADE'S OFFERINGS IN THE NOVELTIES OF THE SEASON

By THE EDITORIAL STAFF

This is the first part of a comprehensive review of the trade activities in new offerings this year. In next month's number the plants, summer roots, shrubs, Roses, and such like, will receive attention.

THE effects of the great war are clearly reflected in the horticultural trade offerings this season. This is due to a large extent to the fact that certain large seed producing centres of the world are now *incomunicado*, and even though there may have been a normal supply of new things scheduled for introduction at this time, yet trade conditions made it impossible to get them into circulation.

Furthermore, the continued warfare will have very largely reduced seed production in those same regions, and has had a restricting result quite apart from the difficulties of communication. Last year we had occasion to mention in the corresponding review that the influence of the European war was clearly seen in the comparative scarcity of seed novelties; and commented further that the loss was being met in some degree by the supplies grown in America. The developments of a year have but served to intensify those same conditions. The ultimate outlook would seem to be much brighter for such staples in flowers and vegetables as can be produced at home. Probably the necessity of turning to home industry as a source of supply will bear fruition in later years by having placed the American seed grower in a stronger strategic position than he had before. It is not likely that we shall ever again be so entirely dependent upon foreign agencies for such things as can be adequately produced at home. The world's commerce is being readjusted.

THE tendency of the trade as a whole, with reference to new things, is summed up admirably in a letter from a prominent eastern seedsman, reading in part as follows:

"We consider this the wrong time to present high priced novelties in vegetables. In order to meet the public demand and to render our country the service which we think it is our duty to give at this time, we have devoted the entire novelty section of the vegetable seed part of our catalogue to the presentation of standard varieties especially recommended for the home vegetable garden."

From widely different sections expressions of the same sentiment have reached us, in one form or another. "Nothing new, but something better—selected strains, strains that are as nearly fool-proof as we can make them," writes a western seedsman. And the catalogue offerings of the leaders of the industry prove their desire to be useful to

purple! One enterprising seedsman has scoured "all the friendly corners of the globe" in search of unusual vegetables designed to acquaint America with some of the food-standbys of older civilizations.

And yet, the year is not entirely bare of *worthwhile* novelties, due to the fact that the fixing process generally covers a period of years. This holds more true in the case of flowers than vegetables. Work of some hybridizers, started several years before the war, is beginning to bear fruit.

Intrinsic Merit in Vegetables

THE Golden State contributes a new *Stringless Green Podded Navy Bean*, bred up by selection, true to bush type, with stringless pods and white dry beans (Aggeler & Musser). Aside from this, the bean situation throughout the country the past summer proved even more disastrous than the one of 1916. It kept the growers busy to provide seeds in barely sufficient quantities to perpetuate the leading standard varieties. The same holds true of peas and corn, though of the latter, Lancaster County, Pennsylvania, brings forth a new main crop variety, *Sweet Heart Sweet Corn* (Holmes) said to bear from two to four ears, each eight to ten inches long, per stalk.

In *White Top Blood Turnip Beet* an odd form of that important root crop, with *light yellow foliage*, claims attention. Though as a rule, light tops are indicative of light color in the root, this sort is said to have blood red flesh. (Holmes)

Just-in-Head Lettuce of the early butterhead type (Wing) promises to prove a surprise as regards both earliness in heading and standing quality before going to seed. *Ohio Grand Rapids Lettuce*, evolved by the Ohio Experiment Station holds out interesting possibilities for underglass gardeners. It is refreshing to read the bland statement of the introducer (Wing) that this sort is not recommended for outdoor culture.

Working on the basis that an improved strain of a popular standard of *proven* merit is



Sidalcea Rose Queen is a selected type of a native American family that will surely be quite at home in our gardens

gardeners striving after maximum returns rather than to cater to the desires of those seeking the unusual.

IT IS just as well! It is well that we should become better acquainted with what we have. Many a diamond "in the rough" is buried beneath the maze of cumbersome names in the average seed catalogue. The recognition of the food value of root crops is more important to us, at present, than the introduction of a new egg plant of a different shade of



A green podded Navy bean without strings will be welcomed for trial



The Home Tomato as it behaves in California. Potato-leaf type and quite prolific



Ohio Grand Rapids lettuce is a selected strain specially adapted for under glass

more valuable to the country at large than novelties with fickle tendencies, we find *Perfection Radish* (Dreer) a carefully selected strain of Scarlet Turnip White Tip. Recognizing the merit (and crop shortage) of Bountiful Bean, the English type of it, Sutton's Masterpiece, is boosted by quite a few of the leading eastern dealers—(Boddington, Stumpp & Walter, Thorburn). This, while not actually a novelty will be as a newcomer to many gardeners.

As "the earliest big red sort," Livingston describes *Manyfold Tomato*, with the qualifying statement that, during the past season, on 183 plants, there were counted 442 clusters of 5 fruits or more. The *Home Tomato* (Aggeler & Musser), early, medium-sized, purple, is frankly described as a "freak but true-to-type." Its heavy, potato-leaved foliage causes it to be particularly adaptable to sections with long, dry seasons.

Few European Flower Novelties

WHEN it comes to flower seed novelties the dearth of really unique things is very noticeable, due, no doubt, to the prolonged conflict in Europe, whose master seed growers are in the trenches. Even so, it is most gratifying that not all of England's activities in the creation of floral novelties have ceased, for in *Antirrhinum Feltham Beauty* (Thorburn) we have a new rose-pink with white centre, the enormous flower stalks of which are said to make it the largest-flowering sort yet evolved. The *Covent Garden Strains of Calceolaria*, including *Bronze Age* and *Veitchii White* (Thorburn) prove that underglass activities in seed production are progressing satisfactorily in a country now in its third year of war—a fact that should, in a measure, reassure underglass gardeners on this side of the Atlantic.



Sweet Peas continue to advance in favor. Sweet Brier (left), and Snowstorm (right) are newcomers of the early flowering type

In the *Mammoth None-Lateral Branching Aster* (Vaughan) is a new type in which an over production of lateral branches has been restricted. The amount of plant energy thus saved has been directed into channels making for larger individual flowers. Four-inch blooms on two-foot plants resulted, in white and blue.

Occasionally we witness the commendable deed of some one taking hold of a sadly neglected plant group, with sterling characteristics and so injecting new life into it. Dreer gives the group of hardy *Sidalceas* a new lease of life with the introduction of *Rose Queen*, with 5-foot spikes, and *Rosy Gem*, not over 3 feet high.

But the prize for activities in developing new and meritorious kinds of flowers goes to the Golden State where a matchless climate seconds every effort of the plant breeder and hybridizer. For more than twenty years California has contributed a regular share of new forms of such popular annuals as *Eschscholtzia*, *Cosmos*, *Nasturtium*, *Petunia*, *Sweet Pea*, etc. By careful breeding and constant selection,

the new race of *Early-Flowering Spencer Sweet Peas*, of great usefulness for forcing and for the south and tropical climates, has been lifted from the experimental class into the position of an important factor in floriculture. A round dozen new kinds (Burpee) are available as follows:

Daybreak, creamy pink; *Empress*, deep rose pink; *Exquisite*, primrose, picotee edge; *Mauve Beauty*, rosy mauve; *Princess*, soft lavender; *Sunburst*, rich pink with amber and salmon shades; *Zephyr*, pale lavender; *Lavender King*, deep lavender; *Snowstorm*, white; *Sweet Brier*, pink with amber shades; *Blue Bird*, true blue; *Canary Bird*, primrose.

Then, there are a few new *California Poppies*, among which *Vesuvius* stands out

as a wallflower red (Vaughan); *Geisha*, golden orange within, scarlet outside. A mixture of *New Hybrids* (Dreer) vie with each other in rich oriental color combinations.

In *Coral Queen Zinnia* (Fuld) we note an effort to make that otherwise unwieldy annual useful to people with preference for esthetic colors. Dien's *Ruffled Monster Petunias*, of enormous size, and in either distinct or the broadest combination of colors is another demonstration of the favorable climatic conditions of the Pacific coast for growing that particular flower. "Where do we go from here boys?" may we ask when we hear breeders and hybridizers talk about *Petunias* eight inches in diameter, *Gladiolus* six feet tall, and when we see plants change their habits in season of bloom.

We live in a sane age. The days of the "fakir" are gone. And the very fact that flower novelties are so few proves in a degree, that the trade is facing adequately the stern demand of the times.



Ruffled Monster Petunia is here shown a little less than half size. Offered in various colors



None-Lateral Branching is a newcomer in Asters with large flowers on small plants

THE PATRIOTIC GARDEN

FOOD F-O-B THE KITCHEN DOOR

He also Fights who

Helps a Fighter Fight

EAT • FRUIT • AND • SAVE • SUGAR

EAT • NUTS • AND • SAVE • FAT

CALLING THE CLASS OF 1918

LET US approach the city garden problem for this year in a sane spirit, planting only those vegetables which experience has taught us will grow under the adverse conditions of soot, poor soil and limited sunlight.

As a member of a committee that has been going over the results of last year's war garden campaign I have seen so much misguided effort that I feel impelled to offer these remarks:

Tomatoes, cabbage, lettuce and the roots such as beets and carrots, will thrive in most places, but the yield per foot from corn, peas, and lima beans is too small to be of value, and potatoes are hopeless except in well fertilized garden soil that has been worked several times. String and wax beans may prove a success but they are "chancy" and subject to blight.

The following suggestions may be helpful:

A beginner is prodigal in the way he plants and his wastage is great. Let him try sowing three seeds at a time, three inches apart in the row.

Manure is of course the best all around fertilizer, but it is often impossible for the city dweller to procure, and he should know that a certain amount of commercial fertilizer may be used.

He should never plant to have more of a crop than can be used at its best. Four to six feet of lettuce planted every week will be far better than ten feet planted all at once.

Let him have no fear of short lengths of a variety, even if the rows look broken, if he remembers to keep the tall growers at the back.

If his ground is low, let him dig a trench around his garden and through the middle to drain it, otherwise some rainy day he will find his cherished seeds or little plants afloat.

If he plants spinach, it is the most successful dried vegetable there is.

His green tomatoes should be brought into a cool cellar at signs of an early frost, and each one wrapped separately in oiled paper.

His cabbages will be greatly improved if dug two or three days before they are to be used, and left turned upside down on the ground with their roots exposed to the air.

All old vines should be dug in to enrich the soil, and a little place kept for a compost heap of leaves, lawn clippings, the outside leaves of lettuce and cabbage, and the whole lightly covered with soil to prevent an unsightly appearance.

Another matter to which the attention of the GARDEN MAGAZINE readers should be called is the preparation of vegetables for market. The consumer has come to demand that all root vegetables shall be washed, asparagus cut in equal lengths and tied in bunches, lima beans shelled, and apples polished. This requires an enormous amount of labor, which might be released for more important work, and in no case would the buyer suffer. The roots have to be washed again before cooking, there is waste in cutting the stalks of asparagus to make them even, lima beans keep better in the pods, and the light fuzz on the apple is its natural protection.

Stalls in the markets might advertise their goods as a trifle cheaper when prepared in the latter way.

The question of labor on all farms is so serious that every possible aid should be given the farmer in simplifying his work, that he may keep up production to the nth power.

Cleveland, O.

KATE B. BURTON.

A War-Time Garden ANNA M. BURKE

BASING PLANS FOR THE 1918 GARDEN ON THE MEASURED RESULTS OF A SUCCESSFUL EFFORT LAST YEAR

A PLOT of land 50 x 60 ft., and a family of three to provide for! These were the conditions that faced us in the spring of 1917, after a winter in which the prices of ordinary food-stuffs had soared to almost prohibitive heights. Our problem was to plan a garden that, with succession and companion crops, would produce all the vegetables needed through the summer, and as large a part as possible of our winter supply.

We succeeded fairly well in accomplishing our purpose and have better plans for the present year. From the first of May the garden supplied us with fresh vegetables for the table, and we sterilized 76 pints for winter use. We did not succeed in raising enough potatoes, turnips or onions to last through the winter, and had to supplement our supplies.

THE accompanying plans show the garden as finally planned and planted last year, with the revised scheme for 1918.

While the plan practically explains itself, a few words may be said about some of the combinations.

THE early cabbage was started in a small frame near the house and transplanted about April 15th, radish seed being planted between them. As each head was cut a small lettuce plant, also started in the frame, was slipped into the vacant spot. No special part of a garden need be reserved for radish or lettuce, as they may be planted in the row with slower maturing vegetables. We wish to register again our satisfaction with the radish Icicle. We have used it from early spring to late autumn, pulling some November 15th from the open garden, and have found it crisp at all times.

THE first row of beets was planted about the middle of April, thinned out for greens about May 15th, when a few seeds of summer squash were planted at intervals between the little plants. As the squash grew the beets were pulled to make room for them. We prefer to pull all beets when about 2 inches in diameter, canning by the cold-pack method those not needed for the table. They have a much better flavor than when allowed to grow large, and require less time for cooking.

The second row of beets and the two rows of carrots were planted the last of April, and in the space between them the lima beans were sowed June 1st, Henderson's Bush lima being the variety chosen. The beets and carrots were out of the way by the time the beans needed the entire space.

FOR several years peas and tomatoes have been a favorite combination in our garden. The peas are planted as early as weather conditions permit, leaving a space of 4 feet between the double rows. In the middle of this space lettuce plants are set, and about May 15th tomato plants are set between the lettuce. Low growing varieties of peas are selected, supporting them on brush, and they are followed by some late crop. In 1917 the early peas gave way to late endive, while the late peas were followed by Chinese cabbage, which latter failed to head, although the summer before it produced good heads.

ONION sets and peppers are another standard combination. The onions are planted early, leaving spaces for the pepper

plants every two feet. These go in about June 1st. The onions are ready to pull by the time the peppers begin to branch.

Kohlrabi may be planted very early, it matures quickly and is more delicate in flavor than either turnip or cabbage. Moreover, it will produce a crop on land which causes cabbage and turnip to form club-roots. By planting at intervals of a few weeks we intend to have it throughout the season in 1918.

Witloof chicory is sowed in early summer and the roots are dug after frost has killed the tops. They are then packed in boxes of earth and set in a warm cellar. In a short time they send up crisp, white shoots, which provide a delicious salad throughout the winter.

ALTHOUGH we realized that it was not a time to try out new things, we had read so many commendations of the edible-podded pea that we decided to try a packet. The seeds were small and brown, but the growth was amazing. The vines soon reached the top of the 3 ft. brush and proceeded to grow another 3 feet, draping themselves down the sides of the brush. The lavender and purple blossoms, borne in pairs on long stems, resembled Sweet Peas, but lacked fragrance. The yield was enormous, but we found the pods insipid in flavor, inferior to either peas or string beans. Moreover, if not picked daily they grew too stringy for use. The vines were soon consigned to the compost heap and wax beans planted in their place.

Burpee's Brittle Wax bean proved excellent. It was very early, the attractive pods were borne freely, showed no trace of strings and were free from rust. By covering them at night, we gathered beans late in October from our last planting.

THE combination of dwarf corn and bush beans continues to prove successful. The rows may be planted as close together as 18-inches, although 2 feet is better. The beans do not object to the slight shade cast by the low-growing corn, while their thick foliage keeps the ground cool and conserves the moisture so needed by the thirsty roots of the corn. We tried to hasten the maturity of both corn and beans by planting a short row of each about April 20th, setting boards on either side of the row and laying sheets of glass on top. This did not warm the ground sufficiently, however, to effect any gain, and seed planted in adjoining rows two weeks later matured at the same time. About July 1st a few seeds of Delicata squash were planted here and there in alternate rows of corn, the vines occupying the ground after the corn and beans had matured. These squashes escaped the attacks of the borers, which destroyed the hills of Hubbard squash planted in odd corners about the place.

WE HAD heretofore confined our potato crop to a few rows of extra-early ones, because our soil—heavy, clayey loam, in spite of yearly additions of sand, sifted coal ashes, leaf mould and compost—is not suited to root crops. Nevertheless, with the high price of potatoes through the winter and spring vivid in our mind, we decided to see what could be done in the way of a winter crop. Three pecks of Green Mountain potatoes were planted in eight rows. From this area we dug in all six bushels of potatoes, the harvest beginning August 1st. Hereafter we shall try to secure land elsewhere for potatoes and use our present garden plot for crops to which the land is more suited. We shall continue to plant a few rows of extra-early pota-

atoes, planning to have them ripen about July 4th. For this purpose we shall use Irish Cobbler, which we have used successfully in other years for an early crop. Many of our friends have had remarkable yields of late potatoes from Gold Coin.

AS IT seemed wise to plant as many beans as possible to dry for winter use, they were used as a companion crop with the potatoes, planting the seed after the potatoes had received their final hoeing. Unfortunately, the summer of 1917 was so wet that the potato stalks grew unusually tall, while the dwarf beans developed a decided tendency to run, so that each encroached somewhat on the other's territory. This did not seem to affect the Yellow-eye beans, but the Dwarf Horticultural showed some rust, which we attributed to this crowded condition. In the plan for our 1918 garden corn is used as a companion crop for potatoes, this having proved satisfactory in the past. We shall also plant more Yellow-eye beans. Although listed as a bush bean, it requires support (old pea brush is good), but the yield is great and the pods seem free from rust.

THE Japanese Climbing cucumber can be recommended for the small garden. It yields well and the quality is excellent.

The Tall Scotch kale has been left outside for use during the winter, and the parsnips will be left in the ground until spring; when fresh vegetables will be appreciated.

After the middle of August, winter rye was sowed in every cleared spot in the garden, so that by the middle of September the greater part of the plot resembled a lawn, covered with blades of bright green. The rye made a good growth during the fall, and will be dug

DISTANCE BETWEEN ROWS		DISTANCE FROM EDGE OF GARDEN		DISTANCE BETWEEN ROWS	
2'	TURNIP	2'	2'	2'	EARLY POTATOES
2'	LATE RADISH	4'	4'	3'	LATE CABBAGE
1'	RADISH	5'	5'	3'	PUMPKIN
	BEETS & SUMMER SQUASH			3'	RUTABAGA
3'	EARLY CABBAGE FOLLOWED BY LETTUCE	8'	8'	2'	LATE CORN
	CARROTS	11'	10'	2'	RUTABAGA
3'	LIMA BEANS	12.5'	11.5'	1.5'	EARLY POTATOES
	BEETS	13'	13'	1.5'	EARLY CORN (HILLS)
5'	LIMA BEANS	16.5'	16'	1.5'	EARLY BEETS AND SUMMER SQUASH
1.5'	CARROTS	18'	17.5'	1.5'	ENDIVE
4'	EARLY PEAS	19.5'	19'	1.5'	DW HORT. BEAN
	LATE ENDIVE	21'	20.5'	1.5'	EARLY CABBAGE & LETTUCE
	TOMATOES	22.5'	22'	1.5'	YELLOW EYE BEANS
1.5'	LATE PEAS	24'	23.5'	1.5'	ONION SETS
1.5'	CHINESE CABBAGE	25.5'	25'	1.5'	AND PEPPERS
1.5'	ONIONS	27'	26.5'	1.5'	WAX BEANS
1.5'	ONION SETS	28.5'	28'	1.5'	CORN
1.5'	AND PEPPERS	30'	30'	1.5'	WAX BEANS
1.5'	WAX BEANS	33'	34'	1.5'	CORN
1.5'	CORN	36'	36'	1.5'	DW HORT. BEANS
1.5'	ENDIVE	39'	38'	1.5'	POTATOES
1.5'	KOHLRABI & WITLOOF CHICORY	42'	41'	1.5'	POTATOES
1.5'	PARSNIP	45'	45'	1.5'	POTATOES
1.5'	DW HORT. BEANS	48'	47'	1.5'	POTATOES
1.5'	CORN	51'	51'	1.5'	POTATOES
1.5'	SQUASH	53'	53'	1.5'	POTATOES
3'	POTATOES	55'	55'	1.5'	POTATOES
	YELLOW EYE BEANS	57'	57'	1.5'	POTATOES
	POTATOES	60'	60'	1.5'	POTATOES
3'	YELLOW EYE BEANS				
	POTATOES				
3'	DW HORTICULTURAL BEANS				
	POTATOES				
5'	DW HORTICULTURAL BEANS				
	POTATOES				
5'	DW HORTICULTURAL BEANS				
	POTATOES				
5'	DW HORTICULTURAL BEANS				
	POTATOES				
8'	DW HORTICULTURAL BEANS				
	POTATOES				
2'	KALE				
2'	CUCUMBERS				
2'	PARSNIPS				
2'	LATE CABBAGE				
1.5'	CARROTS				
1.5'	CARROTS				

AS IT WAS IN 1917

With the experiences of last year before us it is easy to make improvements for the 1918 plan

WHAT 1918 WILL BE

into the ground in the spring, adding humus and helping to lighten the heavy soil.

THE cost of the garden, exclusive of our labor, was as follows:

Fertilizer	
50 lbs. bone meal	\$1.25
100 lbs. complete fertilizer	1.65
Seed potatoes, 3 pks.	2.35
Small seeds	2.52
Onion sets, 1 qt.	.25
Pepper plants, 1 doz.	.25
Insecticides	.85
Winter rvc, $\frac{1}{2}$ pk.	.80
	\$9.92

Considerable saving in the cost of seed was effected by combining with a neighbor who plants practically the same area and the same varieties. Peas were bought by the quart, beans by the pint or half-pint, some seeds by the ounce. These were divided, thus securing better prices and halving the express charges. In the case of many seeds, such as tomato, turnip, cabbage, onion, lettuce, endive, etc., one packet furnished ample seed for two small gardens. There is no advantage, and much waste, in sowing seed too thickly. If the ground is well prepared and

cultivated, and the seed purchased from a reliable firm, practically every seed germinates, and one may spare himself much useless thinning.

No outside labor was employed in the garden, which was spaded, a small portion at a time, and cared for in our spare hours during the day.

This year it is simply a patriotic duty to make every single seed count because of the actual scarcity of supply. The unusual demands on stocks last year and causes beyond the seedsmen's control that limited production have made care in present handling a real necessity.

Pruning For Fruit This Year M. G. KAINS



The quince is a class by itself producing blossoms at the tips of short shoots. Pruning consists largely of thinning

SUPPOSE you have fruit trees already growing—perhaps neglected—how shall those plants be handled to make fruit less a matter of chance and more one of certainty this very year, when the need for production and conservation of home supplies is more imperative than ever before?

If the plants have become choked with dead wood, the most casual reflection will suggest that this, being worthless or even harmful, must be removed for the freer admission of light and better circulation of air, thus giving the living wood a greater chance to do more than merely eke out a miserable existence.

The removal of dead wood from fruit bushes such as raspberries and gooseberries presents no problem. All that is necessary is to make cuts close to the ground and pull out the thus loosened brush as gently as possible so as not to injure the living canes. So also with the grape. More care, however, is necessary because neglected and even well managed vines interlace considerably and there is greater difficulty in getting out the trash. But it must be done, so take your time and don't worry about living wood accidentally broken. Remember that a lot, perhaps a tremendous lot, of such wood must also be removed. In fact when the pruning has been properly done more than three quarters of all the growth will be in the brush pile.

When removing large dead or undesirable branches from trees, be sure to exercise care not to break the living parts any more than can be avoided nor tear or split the main limbs or the trunks through improper ways of cutting. The correct way to cut off large

limbs is to make three cuts, the first on the under side of the branch to be removed and a foot or so away from the crotch with the part that is to remain. When the saw sticks or "binds" withdraw it and start the second cut on the upper side of the branch at about the point where the lower cut would have come if the saw could have been made to work through. Pretty soon the branch will break off leaving a stub. But stubs must never be left in trees because in time they decay and carry infection to the heart wood, thus dooming the tree. They must be cut off so close to the branch from which they have grown that there will be the least possible shoulder or hump left. The wound should be parallel and continuous with the branch. Making the third cut in this way will often leave a far bigger wound than if a "good sized" stub or shoulder is left; but remember that a "good sized shoulder" is a *bad sized wound* because healing over will take far longer and thus danger of decay will be all the greater.

Where the diameters are less than $1\frac{1}{2}$ inches and the cuts have been as just recommended no painting will be necessary, because the tree will heal over the bare spot in a year or two—before decay would enter. But where the cuts are much larger they may be painted.



The cherry (also apple and pear) flowers develop from winter cluster buds on spurs. Prune very little

Fruit growers and investigators are not agreed as to the best dressing for tree wounds. Until recently pure white lead mixed with pure linseed oil has been most favored. A little lamp black or sienna to make a gray color will make the wounds inconspicuous. It must be said, however, that in a few years, even in spite of annual dressings, decay often forces its way through cracks in the paint and the trees die sooner or later. Personally, I favor creosote but with this reservation: it must not touch the young wood, the living bark nor the cambium.

In using the creosote the brush must contain only a little and must be applied by an oscillating movement beginning at the centre and leaving an untouched rim of fully half an inch all around the edge of the wound.

In order to prune intelligently for fruit production it is essential to know how and where the fruit is borne. No one rule will cover all kinds of fruits.

THE RASPBERRY, dewberry and blackberry patches are full of canes even after the dead stuff has been cut out. The first thing now is to cut all the puny growths close to the ground. Next reduce the number of canes to three or four of the sturdiest to the hill—if the hills can be recognized—otherwise have them stand six or eight or more inches apart in the row and keep this as narrow as possible. Now shorten the main canes to 30 or 40 inches and the branches to about 15 inches. These lengths are unusually long but if we don't know what varieties we have we must leave them perhaps longer than is necessary so as not to destroy the fruit-bearing parts. For varieties differ more or



Peaches flower in a way all their own. Prune to keep the tree open

less as to the positions of bearing their fruit; some bear close to the main canes, others much farther out on the branches. When the flowers appear is the time to observe the



The grape needs a lot of wood cut away, leaving only a few of last year's canes to bear fruit

position of the fruit buds of each variety so as to know just where to cut in years to come.

Only one other point need be noted. Since the canes of raspberries and their kin die back to the ground after having produced their crop they may hereafter be cut out as soon as the fruit has been gathered in July or August.

CURRENTS and gooseberries are much alike in their method of fruit bearing. They usually send up more straight light colored shoots from the crowns each year than are necessary, so all but the two or three strongest that grew in 1917 must be cut out. These shoots will bear no fruit until next year, 1919. Similar shoots which grew in 1916 will bear this year and so will older ones, but since they will produce less and less fruit (and this of smaller and smaller size) after they have borne three crops they must be cut out as soon as the third crop has been gathered. In neglected bushes these old stager stems may as well be cut out in March, unless you want to prove how poorly they will bear in comparison with younger ones.

PROBABLY people are more afraid of pruning grape vines than any other woody plant. Pruning the grape is far simpler than most of the grape literature would lead us to believe. Remember that each good plump bud is capable of producing a branch which may bear one to five large clusters of grapes. Ordinarily strong home garden vines may be allowed to carry 15 to 20 such buds, for a crop of 45 to 60 clusters is load enough for such vines to carry every year. The buds to be left for the 1918 crop should be upon wood which grew in 1917. They may either be scattered along a sturdy cane two or three feet long or upon similar canes shortened to two or three plump buds, the ones lower than these being rubbed off because usually inferior and barren. By bearing these points in mind any one can prune and get fruit.

UNLIKE in habit as it is, the quince approaches the grape in its manner of fruit bearing; for the buds which grow into branches and leaves in the spring bear flowers also—but at their tips instead of opposite the leaves as in the case of the grape. Pruning

of the quince therefore is as simple as that of the vine. All that is necessary, after cutting out the dead wood, is to cut off the undesirable lower growths, also the puny ones in the outer part of the top, and then shorten to about one half the sturdy twigs which grew last year in the top. These will probably bear several times as many blossoms as needed; therefore by midsummer the inferior and misshapen fruits had better be cut off.

THE PEACH and its smooth skinned sport, the nectarine, bear blossoms differently from any other fruit, *i. e.*, beside the leaf buds on the twigs that grew the previous summer. These fruit buds are easy to recognize, first because of their position and second because they are round and plump whereas the leaf buds are longer and pointed. To be sure on the interior of the tree blossom buds may be found on rather short wiry twigs unaccompanied by leaf buds, but after the eye has once seen the flower buds in normal position there is no mistaking them. These wiry interior twigs need not be pruned at all because usually they die when two or three years old after having borne a few fruits each. If the tree is kept rather open so sun and air may enter freely these fruits should be as well colored and as well flavored as those borne in otherwise more favored parts of the tree.

The twigs which bear the blossom buds in normal position must be cut back 50 to 75 per cent. and the worthless ones removed entirely or shortened to mere stubs. As to the amount any one branch on any one tree shall be shortened, the variety and the behavior of the tree must decide. The best guides in this respect are first, the relative positions of the fruit buds (either close to the point where the twig started to grow last spring, or farther out); and second, the number of fruits the twig is desired to carry. The peach annually tends to spread farther and farther because the terminal buds on the twigs grow most strongly. This is undesirable; first, because it makes the tree cover too much space; and second it makes it easier for the branches to break down when loaded with fruit or ice. It is advisable therefore to keep the fruit-bearing area as near the main trunk as possible.

The easiest way to reduce the number and increase the size of the fruit is to cut off part of the twigs.

PLUMS, cherries and apricots bear some of their fruits in a way that suggests the normal method of the peach—laterally on the growth of last year—but the great



This shows how the grape shown above should look after being properly pruned—only the newest canes left

majority of specimens are produced on little twigs anywhere and everywhere in the well lighted parts of the tree. These "spurs" as they are called generally carry near their tips clusters of several buds from each of which one or two fruits in the case of apricots and plums to perhaps half a dozen in the case of cherries and as many leaves may develop. The bud at the tip of each spur is usually a wood or branch bud which extends the spur and develops the fruit buds for the following year. One or more of the other buds may develop a branch on the original spur. It is evident that the less pruning done the better.

APPLÉ and pear trees present the most peculiar method of fruit bearing. While some varieties in some sections of the country bear part of their fruit laterally on the young growths, the great bulk of the crop is borne on



Apple clusters opening terminally on spurs. These "spurs" must not be broken off young trees

spurs, but these spurs rarely bear two years in succession. Furthermore, while the "cluster buds," as the plump ones are called, contain about a dozen blossoms and as many leaves they seldom mature more than one fruit—sometimes two—and unlike the cherry and plum spurs which are fairly straight, apple and pear spurs change direction every year so that when old they have become the most crooked and contorted things imaginable.

Herein lies one of the niceties of apple and pear pruning: the utmost care must be exercised to avoid breaking these spurs because a spur once gone is gone forever! The only time that they should be cut off is when there are too many. This may occur in old trees, but only two or three years' observation during the fruiting season can decide the point. If the fruits are small, if there are few of them, and if such as do mature are of poor quality for the variety, the most unfavorably placed of the spurs may be removed. Instead of removing individual spurs, however, small branches in the upper parts of the trees may be removed, preferably scattered here and there so as not to make great gaps and thus let in too much sunlight with the possible danger of sun-scalding the previously too shaded branches.

As to young apple and pear trees—trees under ten years old—beware of pruning too much. The probability is that they understand their functions in life better than the best pruner. Most important of all: keep hands off every one of these little stubby twigs—fruit spurs—that begin to appear perhaps as early as the second year after planting.



Conventional planting. Seed pieces dropped 15 inches apart in a furrow

Another method: using a pointed stick to make a hole for the seed

Use of fertilizer for potatoes rather than manure which induces scab

Covering and firming with the feet is practical in the garden

Are We "All at Sea" In Potato Culture? W. C. McCOLLOM

WASTEFUL CONVENTIONAL WAYS OF SEEDING COMPARED WITH MORE INTENSIVE METHODS—EATING THE POTATO AND PLANTING IT, TOO

WHY waste all the food value of the potato when planting "seed." Isn't it foolish to say the least? Even at the unheard of prices that prevailed during the potato shortage last year, there was nothing that could be substituted for them. It was a common sight to see folks of very meagre means carrying home a small bag of potatoes, having cost them more than their bread for the same meal, which makes it all the more convincing that potatoes to-day as a food crop, are as important to the home as wheat or even meat. We must have them in increasing quantities.

I have seen it stated in bulletins even, I have read it in the morning papers, and heard it from the lips of those who should know, that potatoes wouldn't reproduce from skins planted with the eye intact, the claim being made that the plants would make vine but wouldn't produce tubers. Some even went so far as to state they could tell the difference between the appearances of plantings made with skins or anything, in fact, excepting the customary cut pieces weighing about $1\frac{1}{2}$ to 2 ozs.

FOOLS walk in where angels fear to tread." I started to experiment; I took a plot which was ap-

proximately 15 x 30 ft. which gave me 6 rows, almost 3 ft. apart and 24 hills to the row, I replaced any blanks, which were few, in the planting of 144 hills. The plot ran east and west, and we will number the rows, beginning at the north, calling them from 1 to 6. The seed used was ordinary seed which was purchased at the village store and, not having any formaline or other germicide, I planted the seeds without dipping, although this is anything but a good practice. The ground was rather poor, but of good texture and as it had been supporting a growth of wild blackberries

and cherries for a number of years, this was cleaned off thoroughly and the ground spaded, removing all roots; the furrows were made with a draw hoe and the same quantity of fertilizer was used in each row, exactly a pail full to the planting of 180 feet of row.

ROW No. 1 was planted with eyes, that is, small pieces of the potato gouged out with a knife not larger than a quarter, of course, each one containing an eye. They were planted exactly the same as cut pieces are usually planted. The 24 eyes necessary for the planting were all taken from a half dozen potatoes and *didn't reduce the culinary value of the potato to any great extent*, as the balance of the potatoes used for seed, left us a liberal portion for our dinner. In this row not a single eye failed. This might be accounted for somewhat by the selection of strong eyes which this system of cutting makes possible, whereas, with cut pieces, many blind eyes are included in the seeds.

ROWS number 2, 3, 4, and 5 were planted with cut pieces weighing about $1\frac{1}{2}$ to 2 ounces each, just the same method as my father, your father, and their fathers had used.



For the purpose of getting exact records each hill and row was carefully weighed and the figures recorded. No guess work



The potato peelings were made carefully with a view to planting; a little thicker than usual. But plenty of potato was left to eat



Also when eyes were cut for planting, and they are good eyes too, there is an appreciable quantity of food left behind

ROW No. 6 was planted with skins, the potatoes being peeled just a little thicker than usual to preserve the eye. I planted these carefully, being sure that the eye was looking up at the sun, as I wanted to give the poor puny looking things a chance to make good. And they did!



HOW THE DIFFERENT PIECES START. On the left a piece of skin with eyes sprouting. They seem quite vigorous. Next a conventional cut piece of seed. The sprouting shoot was broken off and replanted, giving 1 lb. 14 ozs. yield. To right a single eye as shown in the picture above, on the right.

ALL the planting was done on the same day, May 3rd—a little late perhaps, but all had an equal chance. I kept the bed well cultivated; in fact, I kept it scratched thoroughly with my fingers so anxious was I to see when the potatoes would start. I found one cut piece with a growth about 1 inch long, and I immediately broke it from the seed, photographed it, put it back, labelled the hill, and it produced just as much in quantity or quality as any of the other hills. About May 28th, practically all the hills showed through, excepting a few which I replaced. I found the skins were slower to start than the cut pieces, but there was practically no difference between the eyes and the cut pieces.

THERE was nothing of interest regarding the growth of the plots. I kept them well cultivated, looked after the potato bug closely, and by hand picking I only had to spray once, using arsenate of lead. The potatoes weren't bothered to any extent with the flea beetle, and were not attacked by blight. The planting was kept intact. I didn't allow any one to dig any potatoes from the experimental plot as I wanted to give the tubers a chance to mature unmolested. They were cultivated flat until they flowered; I then drew the soil up around them very well.

The potatoes were dug on September 16th. I kept each hill separate, that is, any that looked unusual either in number of potatoes or weight, and I then weighed the best hill in each row with the following results:

Row No. 1 planted with eyes only, largest hill, 8 potatoes, 3 lbs.
Row No. 2 planted with cut pieces, largest hill, 11 potatoes, 2 lbs. 14 ozs.
Row No. 3 planted with cut pieces, largest hill, 10 potatoes, 2 lbs. 15 ozs.
Row No. 4 planted with cut pieces, largest hill, 14 potatoes, 2 lbs. 14 ozs.
Row No. 5 planted with cut pieces, largest hill, 8 potatoes, 3 lbs. 3 ozs.
Row No. 6 planted with skins only, largest hill, 8 potatoes, 2 lbs. 8 ozs.

Then I weighed the entire yield of each row separately, with the following results:

Row No. 1 planted with eyes, total for 24 hills, 48 lbs. 8½ ozs.
Row No. 2 planted with cut pieces, total for 24 hills, 46 lbs. 7½ oz.
Row No. 3 planted with cut pieces, total for 24 hills, 46 lbs.
Row No. 4 planted with cut pieces, total for 24 hills, 50 lbs. 4 ozs.
Row No. 5 planted with cut pieces, total for 24 hills, 48 lbs. 10 ozs.
Row No. 6 planted with skins, total for 24 hills, 48 lbs. 6 ozs.

THE average for the bed was about 2 lb. to the hill, the row of skins, therefore, proved to be a little above the average. The row planted with eyes was also above the average, and again the young plant which



Here's the old time-honored way of cutting seed. Is it good enough now when waste of food material is a crime?

was broken from the seed potato and planted again, yielded 1 lb. 14 ozs. which was practically up to the average.

I know some one will say that it is not so, that if it were possible all this would have been discovered years ago—maybe it would have been if potatoes had been ten dollars per barrel; but back in 1899 the potato crop of the United States only averaged the growers 38 cents per bushel and

under those conditions what would be the use of being mean and stingy with the seed? Further than that, I met a woman who has been planting potato skins for years. She saves her potato peelings, of course making them a little thicker than usual to have a little substance to preserve the eye, until it can be planted, and she has always had a good crop of potatoes.

ANOTHER proof that potatoes will reproduce without the old stool, which in my estimation serves no other purpose than a container for the eyes, is the fact that potatoes can be propagated from cuttings. New varieties are increased in this manner. I have practised this method myself, and one grower a few years back won a prize for reproducing 2,500 lb. of tubers from one pound of seed in a single season. If potatoes will reproduce from cuttings, why not from any growth that develops from an eye and which is not dependent upon the cut piece of potato?

WHAT advantage can be gained is the next point to consider. Of course, the economic gain is paramount. Even though the plan cannot be applied to farming where everything is done by machinery, it would be possible in all cases where hand planting is practised. In place of planting six pieces of potatoes that weigh about 12 oz., plant 6 pieces that weigh less than 2 oz. In planting 30 feet of drill I used 24 pieces that only weighed 8 oz., that is, the eyes with skins, the seed for the 24 hills weighed less than 6 oz. On the basis of the eyes it would take about 4 bushels of seed to the acre by weight, of course. As the regular method of planting takes about four barrels per acre this would mean a saving of 2½ barrels per acre; or further, about 15,000,000 barrels of potatoes on the acreage seeded down last spring. Of course, the whole thing hinges on whether

or not the idea could be applied to farming. I don't think the skins could be used thus and my plans limit the home garden. There is not a doubt in my mind regarding the feasibility of planting cut pieces which could be cut very uniform, more uniform than seed pieces can by dividing the entire potato; and there is no reason why this couldn't be applied to farming.

THE yield of my potato patch was at the rate of 365 bushels to the acre which is not large for home gardens where the best of care can be given, where weeds are not allowed to grow, where the ground can be kept constantly stirred to promote growth, in fact where close attention can be given the crop. But it was not the field I was interested in it was simply the comparative differences between the three different methods of reproduction and frankly there was so little difference that I unhesitatingly recommend the planting of either skins or cut eyes. When potatoes are as scarce and expensive as they were last year, using cut pieces is too much like

putting gold into the ground to get silver out.

The potato after all can be grown with very little difficulty. A fairly rich soil and constant cultivation are the important factors to assure success. When the potato is attacked by the beetle or by blight occasional sprayings with bordeaux mixture and arsenate of lead combined will protect the crop.

In Europe the yield of potatoes is considerably higher than in the United States. The average production per acre for 10 years from 1905 to 1914 in the United States was 96.4 bushels, Hungary 120.4, France, 129.6, Germany 204.3 and United Kingdom 213.8, so after all, Ireland has a

just claim on the white potato. Why do we produce less than 100 bushels per acre when the United Kingdom produces more than 200? Why are potatoes which were imported into Europe from the Western Hemisphere more at home there than here, their next door neighbors? The one big reason is that we haven't applied ourselves as thoroughly as they have abroad. That is a hard statement. I am distinctly American, a believer in American institutions and American methods, but the truth must be faced in potato culture. We are not as advanced as we should be.

One has but to visit the east end of Long Island to prove the truth of this statement. The farmers there all average better than 200 bushels to the acre. Some might say the soil is particularly adapted to the potato, which might be true to some degree, but the truth is the farmers there have studied the potato, they plant them, harrow them, cultivate them, spray them, harvest them, and market them on a scientific basis, and only under such methods will the returns reach the standards which should be attained.

THE AUTHOR SAYS ABOUT THIS ARTICLE:

"I realize this is directly opposite to the pamphlets and bulletins sent out by agricultural and government experiment stations, but the test was fair in every way and this is a truthful statement of the result."

The Succession Problem in California SIDNEY B. MITCHELL

DIFFICULTY OF KEEPING UP APPEARANCES IN A CLIMATE WHERE GROWTH IS ACTIVE FOR ALL THE TWELVE MONTHS—SOME PRACTICAL COMBINATIONS AND COLOR HARMONIES

THE Eastern gardener who spends four or five months of each year waiting for spring has nothing but envy for the man on the Pacific slope who has so little winter and so much spring. He probably never considers the difficulties of keeping up a garden twelve months of the year, and particularly of preventing the places "out of bloom" from becoming the greater part of his borders. Where daffodils do so well and bloom so early, who can restrain himself from planting hundreds, which will flower for a month or so and leave gaping wounds for the rest of the year? No one who has seen the Bearded Irises thrive as they do in California can do without many of the best of a race so adapted to his natural conditions, yet after May where they have been planted he can hope for nothing but their clean (but somewhat uninteresting) foliage for ten months more.

Of course there is one quite simple solution to all this, that is, to have several small gardens, one devoted to spring-flowering bulbs, another to summer flowers, perhaps a third to Chrysanthemums, always forgetting the one out of season. But as this ideal arrangement is not open to the many of us who must live near a city and cannot afford to buy or take care of more than a lot 50 by 150 feet, I have thought it possible others might be interested in some very practical devices to keep the garden in bloom. Many of these I have tested myself, some have been tried by my friends, while others were used at the Panama Pacific International Exposition in the flower gardens under the care of Mr. Carl Purdy.

In the following recipes I have given first the flowers used with the time of blooming of each crop, followed by a few suggestions in regard to planting or sowing.

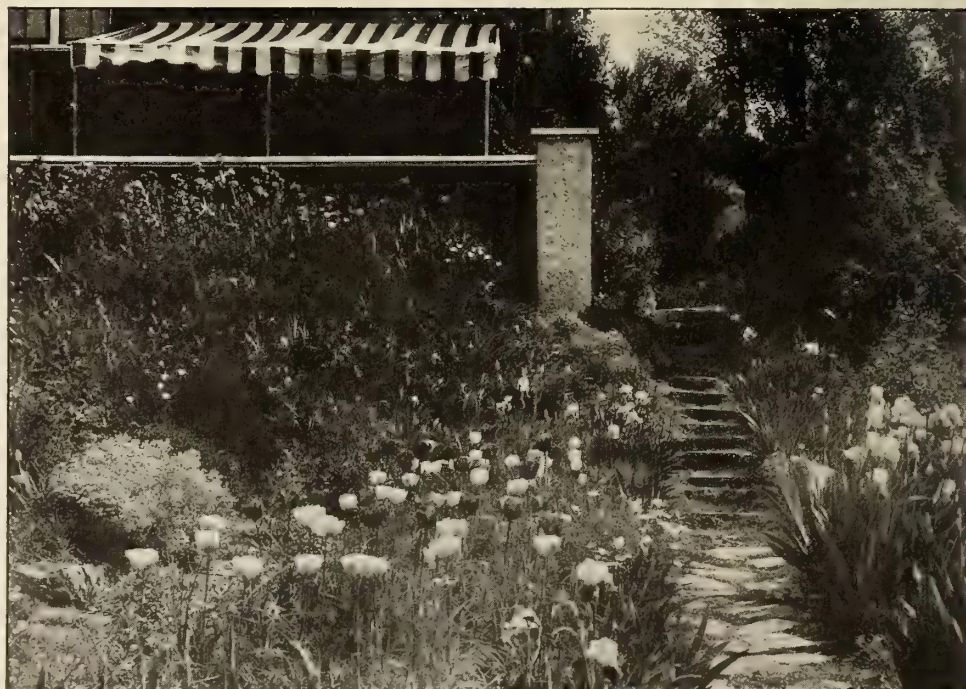
These schemes in practice are not at all complicated. A few years ago I began a new garden on an open hillside. I soon learned

that I was going to have succession crops anyway. The difference is that at the beginning I had a succession of weeds, which I really believe were as much work as my present succession of flowers, and less satisfying to my soul.

1. Daffodils (February—March); Spanish Iris (April May); Calliopsis (July—October)

PLANT the Daffodils and the Spanish Iris at the same time. October is best, as Daffodils profit by the earlier rains and

Spanish Iris bulbs deteriorate if kept out of the ground too late in autumn. Daffodils may go with base of bulbs six inches below the surface and about six inches apart. The Iris need not be deeper than three inches and may be spaced among the Daffodils. This allows room for both to be left a second year, after which they are better lifted and divided. The different depths of planting allow free root run for each variety of bulb. Put the Daffodils in first, marking the location of



Early April. Darwin Tulips in various shades of blue and pink fill left hand border. Earlier varieties of tall bearded Iris are also in bloom, for in California the season for these extends for over two months. Only lavender, blue, white and pink ones were used in this part of the garden. Pheasant Eye Pinks finish off the border in the same color range. (See page 84)



March. Daffodils in bloom. The varieties are Barrii Conspicuous and Mrs. Langtry



Early May. Spanish Iris, chiefly in blue shades and some white have followed the Tulips in the same border.

Tall branching annual Larkspurs in blue, lilac, pink, and white were sown in previous autumn after the bulbs were set. Thinned out in March they came into bloom in June and for two months continued the color scheme long after the bulb foliage had gone



June. Background of tall Perennial Larkspurs now in bloom and will give three complete crops. Foreground of bulb foliage (concealed here by Iris leaves) is covered by Nasturtiums in cream and pale pink shades. Seeds sown in March among the Spanish Iris and Daffodils

each bulb by a stick. This will assist in properly locating the Iris among them, after which the sticks may be pulled up. In early April, preferably during a cloudy period, gently cultivate the soil and sow seed of Calliopis, using a tall variety if the patch is in the rear of the border or a dwarf strain if near the front. Seedlings can be thinned out in late May, after both bulb crops are over.

There is in California a widely prevalent but quite erroneous belief that watering in summer is likely to rot spring-flowering bulbs left in the ground. This peculiar idea, which has mitigated against the planting of cover crops, has no basis in fact; indeed the practice of leaving bulbs all summer in the ground in countries such as England, where summer rainfall is frequent, should be sufficient evidence of its fallacy. One may therefore irrigate freely the annuals sown among such bulbs. When the Daffodil foliage begins to get limp and yellow, remove it, but of the scantily leaved Iris stems 18 inches or so must be left so as properly to ripen the next year's bulbs. These will be hidden by the Calliopis.

This is the combination I prefer, or, more specifically, Daffodil Sir Watkin, Spanish Iris Cajanus, and Calliopis tinctoria—all yellow and therefore easy to handle in a color scheme. There are several other annuals which may be substituted for the Calliopis; such are annual Chrysanthemums, Nasturtiums, *Bartonia aurea*, *Linum grandiflorum*, Cornflowers, and Sweet Alyssum.

2. Daffodils (February—March); Ixias (April); Zinnias (June—October)

THIS combination is given as an example of what can easily be done where it is the intention to dig up the bulbs after they have ripened. Plant the Daffodils and Ixias in the same manner as the bulbs in the previous arrangement, excepting that Ixias may with advantage be planted more thickly than Spanish Iris. As Ixia foliage is very scant, their garden appearance is better when interplanted with Daffodils than when grown alone. Never use mixtures, as the colors do not go well together, but a good yellow, scarlet, or white is delightful. Ixias need bright sunlight to open the flowers. Having such slight foliage and coming from South Africa, a country of dry summers, the Ixia, though it blooms a month later, ripens its foliage at the same time as the Daffodil. They can therefore be dug together and replaced by Zinnias raised in flats. Other vigorous annuals more adapted to such an arrangement as this than to act as cover crops are:—*Salpiglossis*, *Petunias*, *Marigolds*, *Verbenas*, *Scabious*, and *Sunflowers* of the *Stella* or *cucumerifolius* type.

3. Tulips (mid-March—mid-April); Spanish iris (late April—May); Annual Larkspurs (June—July)

BY Tulips I of course mean the so-called late Tulips of the Darwin, Breeder, or Cottage types, all of which bloom in California about two months earlier than in the east. The Early Tulips are absolutely worthless outdoors in California. Even the late Tulips demand some care in lightening heavy soil and in fertilizing, but they are worth it. Generally speaking they deteriorate after the first year, yet such vigorous varieties as *Inglescomb Pink* and *La Merveille* without lifting have given me a fine show the second year,—smaller flowers but more of them.

Plant the Tulips and Iris according to directions given above for Daffodils and Iris.

Sow seed of tall annual branching Larkspurs in November. These are available in a nice range of blues, lilacs, pale pink and white with a rosy red variety which is best kept separate. Seed will germinate quickly, but growth through the cold rainy season will be slow, so that it will be unnecessary to thin them out until February. As each plant makes but a single stem branching about 18 inches from the ground, lots of room is left for the bulb foliage. If watered and kept from seeding they will bloom for a couple of months in midsummer while the Tulips and Iris are ripening.

If it is intended to lift the bulbs one may

which I have found useful for variety are annual Linarias (especially the pink, rose, and lavender strain known as Excelsior), scarlet Flax, and the beautiful little yellow composite, *Leptosyne Stillmanni*. Early in June when the annual is going off, clean out the plot, dig, and plant Dahlias for late summer and autumn bloom.

5. *Hyacinths* (February—March); *Omphalodes linifolia* (April—May); *Sweet Alyssum* (July—November)

THIS is simply the combining of an early spring bulb with two annuals, one sown in the autumn for late spring flowers after the Hyacinths are over. When the *Omphalodes*

6. *German or Bearded Iris* (April—May); *Gladiolus* (Midsummer)

THE Flag Irises are, all things considered, the best perennials for California gardens. They are being planted much more frequently since our gardeners have learned that besides the common blue and white there are dozens of other more attractive varieties in lavender, lilac, mauve, yellow, maroon, bronze, and innumerable other combinations of colors. Their increased use has created a demand for something which will give later bloom in the same place. The planting of *Gladiolus* seems the solution. While new Iris plantings are best made in late summer, it is better not to interplant with *Gladiolus* until April, as the flowers of the latter are not wanted before midsummer. It is possible, of course, simply to cut down the *Gladiolus* tops in the fall and let them come up again and bloom in June the second year. This saves labor, and both Iris and *Gladiolus* can be lifted and divided the following September. It is not desirable to subject expensive *Gladiolus* novelties to this competition, but if good vigorous varieties are used the results will be quite satisfactory, for the period of growth of the *Gladiolus* coincides with the period of rest in the Iris.

An alternative suggested by Mr. Carl Purdy is that *Montbretias* be planted among the Iris, and as these also make their chief growth and bloom in summer there is no reason why they should not be used together. I prefer the Iris-*Gladiolus* combination, however, as the foliage of these is so similar. Where the Iris-*Montbretia* arrangement is made both should be planted together in early autumn, and they may be left without moving for two years.

7. *Wallflowers* (March—May); *Pompon Chrysanthemums* (October—November)

THESE are two of the most useful border plants, the former because it takes away from the flatness of spring borders, the latter because it gives wonderful color in autumn and is a better garden plant than its larger-flowered relations. Scattered at rather regular intervals in a north border, I have plantings of *Pompon Chrysanthemums* made up of perhaps a dozen separate shoots arranged in an irregular patch. One variety is used in each clump. After they have bloomed I dig up and discard all but one or two stock plants of each, which are cut down and left where they flowered. The balance of the original patch is then planted in *Wallflowers* raised in a seed bed. When these in turn have finished flowering, in early summer, they are discarded and the *Chrysanthemum* stock plant is lifted, divided into single shoots, pinched back and replanted again over the original area.

In the pink section of my border I have substituted *Canterbury Bells* for *Wallflowers*, and will follow them with pink *Pompon Chrysanthemums*, just as the *Wallflowers* were succeeded by yellow, bronze, and scarlet varieties.

8. *Spring Bulbs* and *Double Gypsophila Paniculata*

THESE can hardly be called succession crops. I have merely noted that during its dormant period—autumn to spring—the Perennial *Gypsophila* needs only the space occupied by its compact bunch of deep roots, but from May to its July or August blooming period it is very rampant. As its foliage is very light I am using it in the back of a north border behind some bulb beds, so that it will gradually cover these shortly after their blooming period is over.



May aspect of the garden shown on page 84. Spanish Iris have grown up between the Daffodils and have the better garden effect because the Daffodil foliage is still green and helps out the scanty herbage of this Iris

substitute for the Larkspur some of the beautiful new Clarkias of the elegans type, or that improvement of another of our natives, the double rose-pink *Godetias*. These are, however, both short bloomers though wonderful in their time, early June.

4. *Tulips* (March—April); *Shirley Poppies* (May—June); *Dahlias* (July—October)

THIS is an arrangement to be used where Tulip bulbs are to be lifted. By sowing Poppies in the autumn and thinning them out in spring you may have a pretty patch of color in your Tulip bed while the foliage is ripening, provided you have protected the young Poppy seedlings from the sparrows. I have found mosquito netting or fine-mesh chicken wire satisfactory. Other annuals

is over clean up the bed and sow *Sweet Alyssum* for succession. Hyacinths may be lifted or not as preferred. Many of the attractive little annuals which one sees in England but never in the eastern United States can in this way find a place in the garden, for they all do well in this greatest of all states for annual flowers. If the gray foliage and dainty white spikes of the *Omphalodes* do not fit the requirements, one may substitute *Baby-blue Eyes* (*Nemophila insignis*), *Creamcups* (*Platystemon californicus*) *Phacelia campanularia*, a glorious blue in color, or *Swan River Daisies* in a variety of blues and white. For *Sweet Alyssum* alternatives would be the constant-blooming hybrids of *Dimorphanthea aurantiaca*, or the hybrid *Nemesis* just now coming into use here.

Gladioli

The Flowers that Make Summer Last Longer



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Mrs. FRANCIS KING
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EUROPE. The Finest Pure White.
BARON J. HULOT,
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6 of each (18 bulbs) \$1.25
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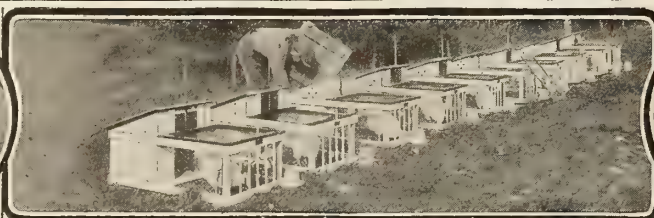
Box 75
Sawyer, Mich.

Patriotic Sweet Peas for July 4th.—It's a far cry from now until next Fourth of July but as fireside planning and seed buying are in order I have a little hobby that I'd like to pass on to the other Garden Neighbors. For several years I have had bouquets of red, white and blue Sweet Peas for the Fourth of July; likewise, before and after that date. Florally speaking, it seems that the Great American Day has been neglected by commercial gardeners. Thanksgiving means Chrysanthemums; Christmas means Poinsettias, Holly, Mistletoe, etc.; what is Easter without Lilies or Daffodils? while Decoration Day means early Peonies—if we can get them. But the Glorious Fourth has no companion flower. Probably because the date falls at a time when nature is most lavish and the gardener who "takes things as they come" reigns supreme, but I have found the Sweet Pea to be the only flower that furnishes "Old Glory's" colors at that time.—For red and white I use King Edward, and King White. The nomenclature is rather un-American, but don't blame the flower. It's the color we are hunting; no matter what the name may be. The President is a grand scarlet red and a most patriotic cognomen. Blues have been harder to get. Navy blues are good, though rather dark, and some varieties listed as light blues prove to be more of a lavender color, so that sometimes I have departed from Sweet Peas for my blues and used small sprays of intensely blue Chinese Larkspur. However, this year I am trying Blue Gem, a new blue Sweet Pea. If any of the Neighbors have trouble in securing a good stand of white or blue Sweet Peas it may be that their soil is at fault. For a heavy loam I suggest a quantity of coarse sand well mixed directly in the furrow where the planting is made. Sweet Pea seed, especially the white and wrinkled-seeded (blue) varieties, must have perfect drainage else they will rot. But the white and blue flowers and patriotic bouquets are worth all the trouble it costs. —Mrs. R. W. Walters, Springfield, Ohio.

A Little Intensive Gardening.—This is an account of how I killed four birds with one stone. Wishing to do a little intensive gardening last spring I selected a small piece of ground 8 x 8 ft. at the end of the vegetable garden. Early in April I set out one dozen Early Jersey Wakefield cabbage plants, and about two dozen lettuce plants were set around the extreme edge. About May 10th all the available space between the cabbage was filled with tomato plants, Chalk's Early Jewel and Ponderosa, eighteen in all. This is how it worked out: The lettuce matured first and formed nice heads by the middle of May. The tomatoes, being trained on stakes and pretty closely pruned, did not interfere with the cabbage which was ready for use early in July, and was removed as fast as needed. After this the tomatoes had full sway. On July 15th Chalk's Early Jewel ripened first-fruit. Enough tomatoes were grown on the eighteen plants to supply a family of four for general use and also enough to can for winter. Toward the end of September the tomatoes had pretty well outlived their usefulness and were taken out and a cold frame set up. This frame was filled with fresh soil, well enriched, and accommodated forty lettuce plants, Big Boston and Wayahead varieties; these plants at this date (November 5th), are growing like weeds and promise to be ready for the knife by Thanksgiving.—A. A. Knoch, York, Pa.



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Legions To Select From

BUT, wouldn't you like to know which really are the best and most satisfactory to grow of all the catalogued varieties? Perhaps it will surprise you to know that there are only just about FIFTEEN, that are worth while for the average garden lover and amateur.

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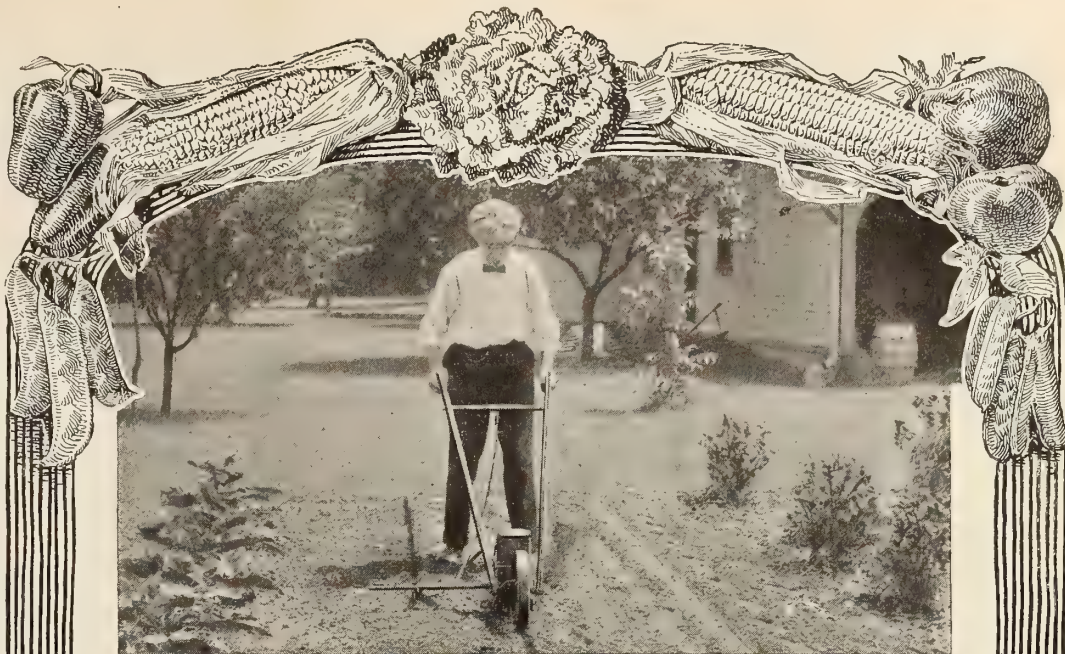


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It's up to you to make your
WAR GARDEN

a booming success this coming season. Don't be satisfied with a garden like the other fellow—beat him to it. Have a garden that you'll be proud of. No matter how backward the Spring, it's easy with

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Send for my Beautiful **BOOK FREE.** It's chuck full of the latest developments in modern gardening. It gives you gardening information found in no other publication. It tells you how you can have a garden with flowers in full bloom and vegetables for your table a month earlier than you ever had before. **Just drop me a post card and I'll send you your copy by return mail.**
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You save time, labor, money, and get bigger and better crops by using

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NEW 72-PAGE CATALOGUE, FREE! Illustrates Planet Jrs. in action and describes over 55 tools, including Seeders, Wheel Hoes, Horse Hoes, Harrows, Orchard, Beet and Pivot-wheel Riding Cultivators. *Write for it to-day.*

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No Weeds

NO vagrant grasses—just long, green rows that sparkle in the morning dew—and rich, moist earth freshly turned—truly a garden of which anyone might well be proud. The kind you can have if you use a

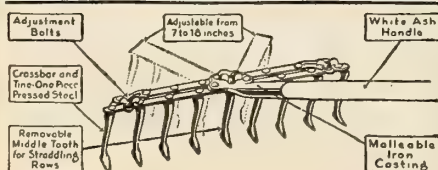
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This handy little tool is instantly adjustable from 7 to 18 inches. You can cultivate any width row or remove the middle tooth for cultivating two rows at once. Thoroughly stirs the soil and can be used as a rake in preparing a deep, fine seed bed.

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Starting Seeds in a Coldframe

SEED-sowing in a coldframe cannot, of course, be done until considerably later than they may be started in the house or in a hotbed; in fact, not until too late to get the plants ready as soon as they should go into the garden for the earliest results. The use of a coldframe, is, however, a very decided advantage over waiting to sow in the open ground, not only because planting can be done a little earlier, but because the seedlings will develop much more rapidly than they would in the open, due to the additional protection from bad weather and cold nights, even after the danger of killing frosts is past. The double-glazed sash have very greatly increased the efficiency and convenience of handling coldframes. Sowing may be done earlier, and growth, as proved by careful experiments, will be much more rapid.

One of the big mistakes usually made in starting seeds in coldframes is to plant in the soil on which the frame is built. As this is often good garden soil, with manure added, it may seem to the beginner that this is "good enough." But certain results cannot be expected unless the same care in the preparation of the soil, drainage, etc., is used in the coldframe as in starting seeds by any of the other methods. Another is to give too much water during the germination period and early stages of growth. Where artificial heat is used, as in the house or hotbed, the soil loses moisture very rapidly by evaporation. In the coldframe conditions are very different, and if the soil is once overloaded with water it will stay wet and cold, making satisfactory growth impossible, for a long time. If the seed is to be sown directly in the soil in the frame, particular care must be taken to see that there is an ample layer of drainage material of some sort below the surface layer.

Stumpage is Valuable Now

THOUSANDS of homes have been without coal. Fuel Commissioner Garfield says that there is likely to remain a shortage of from thirty-five to fifty per cent. of necessary fuel indefinitely. The possibilities of using wood are therefore of moment. In this connection an experiment was recently worked out by Professor Mandenburg, Forestry Specialist of the Michigan Agricultural College. It was demonstrated that there was a large demand for stump wood in the larger cities of Michigan, especially Grand Rapids and Detroit, and that \$2.15 per cord was offered for it by the dealers; that about three dollars' worth of dynamite would blast out and break up stumps containing an average of eight cords of wood.

Merely cutting down trees and using the wood for fuel may take care of a present pressing need, but the practice represents an economic loss in the end, whereas clearing stump land represents an economic gain because after the wood is burned there still remains the virgin farm land to be used in increasing the Nation's food products.

The New York authorities estimate that the cutting of one cord of wood from each acre of farm lots in New York State would in itself save 1,215,000 tons of coal.

Readers who are owners of cut-over land, even if only small plots, may profit from these suggestions. Probably the time will never again come when these stump lands can be cleared and made ready for cultivation not only at no cost but at an actual profit to them.



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THIS picture shows the simplicity, sturdiness and good appearance of the Excelsior Rust Proof Fence. Gives protection to the lawn, shrubbery, flowers, etc., yet permits complete view from any point.

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Yours is the direct pay of pleasurable hours that mean health and reserve energy for every member of the family, the keen joy of making things grow, the table delight of one-minute fresh vegetables—and the direct profit of real reduction in the grocery bills.

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Corona Chemical Co. Dept. 6 Milwaukee, Wis.

10c. for this Garden Guide

If you don't see at first examination that here is just the thing you have been looking for just say so—back will come your 10c and you can still keep the book.

Bee Keeping for Gardeners

MANY garden makers are becoming bee keepers. The two kinds of work go well together, and the increased demand for honey has aroused greater interest in bee keeping than ever before. Indeed, with the Government asking that the honey output of the country be doubled, bee keeping has come to be almost an expression of patriotism. Every man or woman who has room enough for a flower or vegetable garden can find a place for one or more colonies of bees. Properly managed, two colonies should provide enough honey to last the average family the season through. Honey is the best substitute for sugar which can be found, and the scarcity of sugar will certainly continue so long as the war lasts, and probably for some time afterward. That is why Uncle Sam is so urgent that more honey be produced.

There is no reason why garden makers of either sex should hesitate to take up bee keeping in a small way. The expense is small, and but little attention is required by the bees, although, of course, there are certain measures which must be taken if success is to attend the bee keeper's efforts. Swarming must be prevented. The bees must be fed if necessary. A new queen must be given occasionally, and the hives must be properly protected in winter.

The danger of stings causes many women, and some men, to hesitate about keeping bees. Truth to tell, though, there is no reason for being stung at all if one is willing to take the simple precaution of wearing a veil over the face, gloves on the hands, and using a smoker every time a hive is opened.

It will be noted that the Government bee experts are asking that extracted honey, rather than comb honey, be raised this year. The reason is that a much larger amount can be produced by a colony of bees in a given time. When comb honey is made, it is necessary for the bees to first construct the wax combs. Extracted honey is stored in combs which can be used over and over again, so that the bees are free to devote themselves wholly to the task of gathering honey.

It is true that an extractor is needed in order to remove the honey without spoiling the frames. The smaller extracting machines are not expensive, and every bee keeper who runs more than four or five colonies should have one. To serve the needs of amateurs with only a colony or two, a census has been made of bee keepers throughout the country who own extractors which can be borrowed or rented when the honey is ready. It is believed that in this way the coöperation of bee keepers the country over can be obtained in greatly increasing the Nation's supply.

Of course, nothing is gained by having garden makers take up bee keeping if they are not willing to give the bees the small amount of care which they demand, and to make a study of the subject. It would seem, however, as though much could be done to help along this movement for a greater honey production by enlisting the aid of garden makers the country over. Certainly the bees themselves will help the garden maker, for the value of their work in pollinizing flowers has come to be widely recognized. Bee keeping among garden makers is to be encouraged by all means.

In some warm countries the fertilizing of cucurbits has to be done by hand.

Massachusetts. E. I. FARRINGTON.

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A rich, glowing pink Aster, the first of this color which all growers have been trying to get. A magnificent flower of finest form, and with long graceful stems. (See our catalogue.)

**Harris' Flower, Garden and Farm Seeds
Always Grow**

They are all tested and the percent that grow is *marked on the label*. You do not have to guess how thick to sow. We raise at Moreton Farm many vegetables and flower seeds and plants of the *very highest quality*. They can be depended upon to give the very best results, and they cost no more.

Ask for our catalogue (free) and get your seed direct from the grower at wholesale prices.

JOSEPH HARRIS COMPANY

BOX 51

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Vegetable, Flower Seeds and Plants of the very highest quality

Nuts and Fruits for Food and Profit

EAT FRUIT and SAVE SUGAR—EAT NUTS and SAVE MEAT



"OVER THERE" is a direct appeal for more food—without food, what good are men and ships?

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English Walnut, Black Walnut, Butternut, Filbert, Hickory and Chestnut are more nourishing than meat, wheat, flour or potatoes. They are raised, growing and bearing abundantly in the vicinity of Rochester where the temperature range is from 100° in summer to 15° below zero in winter.

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Apples, Peaches, Pears, Plums, Cherries, Grapes, Raspberries, Blackberries, Strawberries, etc., hold out attractive possibilities to land owners. A few fruit trees in the home garden can be so chosen as to supply a family with fresh fruit for a long season.

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We grow Roses. It is life to us because we know it and love it; it is business to us because by it we live. We are thankful that our new catalogue will bring joy to thousands and just plain relaxation to others. It is going to tell you, by word and picture, of the new wonders of the Rose world. It is going to tell you the Roses which we call "Good Roses." It is going to tell you of a concern whose mission it is to keep alive in the hearts of men and women the love of the beautiful. Will YOU relax from care? That book of flowers will come by mail for a post card.

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A. N. PIERSON, Inc.

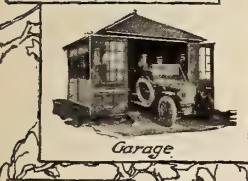
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The Hodgson way is the easy and safe way to build. You order your house from an actual photograph of it, not just a blueprint full of arrows and dimensions. You know exactly what it will look like and how much it will cost. You know there will be no extra expenses, no dirt, no noise. When the house comes to you in painted and fitted sections, it can be quickly erected by unskilled workmen.

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Advance—Cactus type; bright red; large; free bloomer.

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Write for free catalogue

describing Iris, Gladioli, Peonies, Hardy Phlox and other plants and bulbs. It also lists all kinds of flower, field and garden seeds.

The Wing Seed Co., Box 1326, Mechanicsburg, Ohio

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YOU can conserve food by conserving time. You can conserve time by starting your garden earlier. You can start your garden earlier by setting out your seedlings in cold frames now.

Never mind the blows and snows. Never mind the last "gasps" of Winter. Your plants can make just as much progress in the frames as if it were late April or May.

Leave them there until they grow into sturdy, well established plants. By that time, the weather will be such that your regular garden will be ready for business.

Then transplant them—with a full six weeks running start over the man without cold frames.

That six weeks head start will mean more this year than ever before. Will mean more to your country in food conserved. Will mean more to you in dollars and cents because of the high vegetable prices that are sure to prevail.

Send for our Booklet No. 215. It gives you a line on the Pleasures and Profits of cold-frame growing. Contains a wealth of valuable information as to how it can be most successfully done.

WHAT YOUR FRAMES WILL COST YOU

Perhaps you want to get action right away. Don't want to wait for the Booklet. If so you can order now. Here are prices on our most popular frames:

Four Sash Standard Frame

A good all-around size. Each sash 3 by 6 feet. Depth in front, 8 inches; at the back, 16 inches. Cypress is 1¼ inches thick.

Price \$29.90
3 Sash Standard Frame..... 23.35
2 Sash Standard Frame..... 17.05

Junior Frames

Somewhat smaller than the Standard. Very easy to handle. Can be used in limited spaces where the Standard will not quite fit. Sash is 34 inches by 38½ inches. 8 inches high in front. 12 inches in back. Cypress is 1 inch thick. Prices:
1 sash frame..... \$ 5.17
2 sash frame..... \$ 8.39

3 sash frame..... \$11.71
4 sash frame..... 14.99

Booster Boxes

Handy little frames to set over single plants. 11 by 12½ inches. ½ inch cypress securely bolted together by cast iron corner cleats. You can have ten of them for so little as \$6.50.

Lord & Burnham Co.

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Eggplant as an Amateur's Crop

THE average amateur garden maker fights shy of eggplant, or at most buys plants which somebody else has started. It is true that the eggplant is not so easy to raise as most other vegetables, and yet there is no reason why the average amateur should not succeed with it, especially if a hotbed is available. If he has a little greenhouse, success can be assured.

It must be remembered first of all that the eggplant loves heat. It likes a warmer temperature even than tomatoes and peppers. Seeds can be sown indoors or in a greenhouse the middle of March. The more heat that can be given the young plants the better. The temperature should be kept up to 70, at any rate. Directions for growing eggplant often call for two or three transplantings. It is right here that the average amateur is likely to make his mistake. The eggplant doesn't mind being shifted from one flat or pot to another when it is very small, that is to say, before its first true leaves have developed. Later on it is impatient of handling. If the plants are transferred from their original flats to a hotbed or to paper pots or perhaps to other flats when small, and then allowed to grow until set in the open ground, the loss will be very small.

It is of decided advantage to have a hotbed for them, in which no other plants, unless possibly peppers and tomatoes, are grown. Then the heat can be kept as high as the plants require. At the same time ventilation must not be overlooked. When a hotbed is not available, the plants may be started a little later in the house, and then transferred to a coldframe after cold weather is past. It is much better, though, to have a little bottom heat.

Eggplant will grow in almost any good garden soil, provided it is deep and well drained. Of course a warm, sandy soil will give best results, and it is especially important that it should contain an abundance of humus. Because of its tender character the eggplant should not be set out-of-doors in the North until the first of June; possibly later. Oftentimes eggplant fit in well as a succession crop to follow early lettuce. If the ground has been manured heavily in the spring, it will only be necessary to use commercial fertilizer when the plants are set in the ground. Nitrate of soda is the fertilizer most needed. Sometimes it is planted in the hills, but a better plan is to apply it as a top dressing. As the plants require considerable room, it is best to have them three feet apart in the rows, with about four feet between the rows.

It is of supreme importance to remember that eggplant cannot be grown for more than one season in the same place, unless conditions are remarkably favorable. Usually the second season finds the plants succumbing early to fungus troubles in spite of all the spraying and nursing which can be given them. A four or even five year rotation is required.

The purple varieties seem to be the earliest, and for that reason are to be preferred in the North for amateur gardens. It is only fair to say, though, that some markets demand the black varieties, and that some such sort as Black Beauty is mostly produced by commercial growers. European gardeners have a fondness for white varieties, and a good white fruited kind is Ivory, originated by Dr. B. D. Halstead, of New Jersey.

Woodruff's Gladioli



Here I am again. My gladiolus flowers again took first premium at Iowa State Fair in 1917.

Here are two (2) offers: **First.** 2 each America, Chicago White, Mrs. King, Burrell, Cracker Jack, Princepine, Baron Hulot; one (1) each Niagara, Golden King, TITANIC, Candidum, Glory and 25 State Fair Prem. Mixture—all for \$1.00, postpaid. **Second:** 1 each Candidum, Eldorado, Geo. Paul, Golden West, Halley, Jessie, Independence, Mrs. Pendleton, Pink Perfection, Peace, Schwaben, TITANIC, Princepine, Velvet King, postpaid, \$1.00. My new catalogue sent to all. For 15c. will add 1 pkt. POTATO SEED which will produce 50 new sorts potatoes.

You really must mention the Garden Magazine

GEO. S. WOODRUFF
Independence Iowa

12 Choice Irises . . . \$1.00
8 Moisture-loving Plants 1.00

All different, all hardy. Postage paid

Oronogo Flower Gardens, Carthage, Mo.

Horsford's

25th Anniversary
Catalog of

**Cold
Weather
Plants**

Lilies, hardy perennials, shrubs, trees, vines, wild flowers, ferns, orchids. The kinds that stand cold weather. Better plant the kinds that stay: You should see this plant list before placing spring orders. Ask for list N.

F. H. HORSFORD, Charlotte, Vermont

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Cabbage
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Radishes
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Cauliflower
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from
Maggots
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Injurious
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If your dealer has
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supply of "Carco"
write direct to us.

Root Maggots

are hatched from eggs deposited on the plants by the Maggot Fly. This fly dislikes the odor of the spray and will not deposit the eggs where this odor is present. This spray will kill maggots, grubs and caterpillars by contact, when freely used.

The Fame

of "Carco" has spread. Orders have come faster and faster. The factory has increased the output, to fill the demand.

"Carco" can now be had in every town in the United States.

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A trial order will start you right, what "Carco" has done for others, "Carco" will do for you.

Standard Chemical Co., Tacoma, Wash.



An Attractive Planting Will Beautify Your Home

Every home can be made more attractive if trees, shrubs and evergreens are tastefully arranged on the grounds. The trees will provide shade during the hot summer months; the shrubs will give flowers and fragrance from spring to fall; the evergreens will add a touch of green when the ground is covered with snow.

Along the shore of Lake Erie this 64-year-old nursery and seed house has over 1200 acres devoted to raising trees, shrubs and evergreens that are strong, vigorous and hardy. Soil, climate and care are such that plants from the Storrs & Harrison fields are noted for their vitality and eagerness to grow. We guarantee delivery in good condition.

STORRS & HARRISON'S Seed and Plant Annual

tells more about the worth of our trees, shrubs, evergreens, roses; in fact everything for lawn, garden, orchard and greenhouse is treated in an interesting way. A copy is waiting for you. Send for it.

The STORRS & HARRISON Co.
Box 713 Painesville, Ohio

This Year Have a "Glad" Garden

Your 1918 flower garden should include the Gladiolus. There is a charm about "Glad" flowers that make them desirable in every garden. The blooms begin to open in early summer, and continue to unfold until autumn.

My "Garden Collection" affords an excellent opportunity to have a "Glad" garden this year. Set them out this spring, and their flowers will make one of the bright spots in your garden all summer long.

Mary Fennell. Deep lavender; exquisite.
Europa. Snowy white; superb.
Golden West. Brilliant orange, with yellow blotches.
Pink Perfection.
Victory. Delicate sulphur yellow.
Goliath. Dark wine color.
Mrs. F. Pendleton. Flushed salmon-pink.
Cameo. White, overlaid with pink.
Liebesfeuer. Fiery scarlet, shaded orange.
Mrs. Watt. Brilliant wine color.

10 Bulbs (one of each of these
Superb Sorts) Postpaid \$1

My 1918 Gladiolus catalogue shows many varieties in natural colors and tells more about the "Glad" flowers. Send for a copy—it is free.

JELLE ROOS, Box C, Milton, Mass.

(I have a plan whereby you may get twenty-five bulbs for almost nothing.
Ask me.)

Wild Flowers That Bloom Early

should be planted soon after the frost leaves the ground. What is more refreshing to see than the early blooming wild flowers peeping up, from their secluded haunts, in the stillness of a spring morning? They revivify the memories of days gone by when, as a child, you lingered on your way to school to hunt them out. Why not have them growing close by now?

Here is my special offer:

	Per Doz.	Per 100
Blood root (<i>Sanguinaria Canadensis</i>)	\$1.00	\$5.00
Hepaticas (<i>Hepatica acutiloba</i>)	1.25	6.00
Trillium (<i>Trillium grandiflorum</i>)	1.00	5.00
Spring Beauty (<i>Claytonia Virginica</i>)	1.00	5.00
Dog-tooth violet (<i>Erythronium Americanum</i>)	1.00	5.00
Virginia Cowslip (<i>Mertensia Virginica</i>)	1.50	7.50
Dutchman's Breeches (<i>Dicentra Cucullaria</i>)	1.00	5.00

Six of the entire list, \$3.50; Dozen, \$7.00;
Fifty, \$17.50; One hundred, \$35.00

These specially priced flowers are all illustrated and described in my new catalog of 80 pages, together with many other wild flowers, hardy garden plants, rock plants, bog plants, native hardy ferns, native hardy orchids, native shrubs and evergreens. Send for catalog now. It's free.

EDWARD GILLETT

3 Main Street

Southwick, Mass.

There's Witchery in a Water Garden

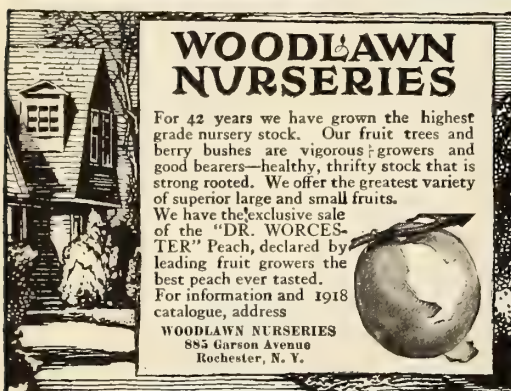
A spirit of witchery hovers over a pool, with its clear water, its fragrant flowers, its flashing fish. Water Lilies and water plants are so easy to grow, and so beautiful, that they should be made a part of even the simplest plan.

My new and rare hardy Nymphaeas will be a valuable adjunct to your garden. **Attraction**, with its huge flowers of garnet-red, white and mahogany, **Escarboucle**, a free-blooming sort with striking vermilion flowers, **Paul Hariot**, large flowers of clear yellow and red, and **Vesuve** dark amaranth-rose, are some of the best, although there are a multitude of others.

"Water Lilies and Water Plants"

(my 1918 Catalogue) shows many rare Nymphaeas in all their natural colors, with other handsome water plants. In addition to giving full information about different varieties of water plants, it tells how to plan and make the garden itself. Send for a free copy.

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Do the memories of bird houses built in boyhood days make you wish for one now?

Let a Hodgson Bird House fulfil this wish and bring joy to your heart, an artistic touch to your grounds. Hodgson Bird Houses are quaint, and attractive. They are designed to harmonize with the architecture of your house. Built of red cedar and carefully painted, they are made strong, durable and vermin-proof. Before it slips your mind, write for a Hodgson Bird House catalog.

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Tree Boxes	\$1.25 each or \$10.00 per dozen

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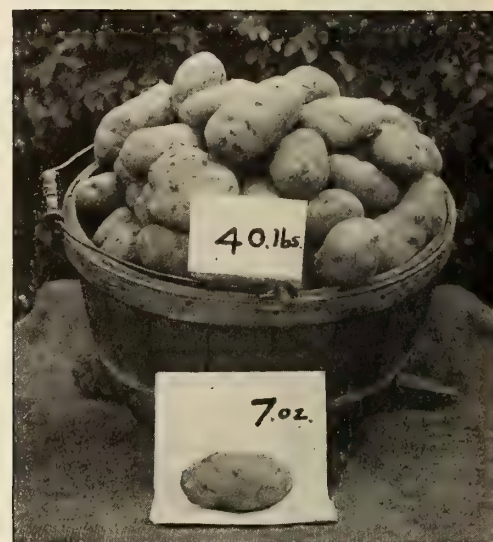


The Readers' Service will give you suggestions for the care and purchase of cats and dogs and other pets

Can Any One Beat This?

Forty Pounds of First Class Potatoes from One Seven Ounce Tuber

HOW many times can a given weight of "potato seed" multiply itself in a single growing season? This is always an interesting question to farmers and gardeners and most growers are thoroughly pleased and satisfied with a yield of twelve to one or fifteen to one; twenty-five or thirty to one is unusual; and the yield indicated above is not obtained by ordinary field methods as practised by growers even where the most fertile soil is used and thorough spraying is given. I was not favored by either of these important factors in securing the somewhat remarkable yield of 45½ pounds of potatoes consisting of 40 pounds of good edible size and 5½ pounds of culls from 7 ounces of seed. It is confidently expected that in this coming season of 1918 with better fertilization and more thorough spraying a yield of 100 to 1 or better can be secured. But the reader will ask, if the high yield was not due to either fertile soil or good culture what then was the main con-



Making the potato work to its utmost. 40 lbs. crop harvested from 7 oz. seed

trolling factor? The answer is, briefly, intensive methods of propagation.

Last April when potatoes were so scarce and high priced that it is claimed some people locked them up in the vault with their jewelry, I decided to sacrifice one tuber of my scant stock in a special experiment to see what it could be made to produce. I selected one average appearing potato and ascertained its weight to be just seven ounces. I then cut it in two lengthwise and placed each half cut side downward in sand on the propagating bench of a greenhouse, allowing the tops of the two pieces to just show above the sand. An ordinary hotbed would have served the same purpose. In a short time the eyes began to throw up shoots and when these were about a half inch long they were broken off using the thumb and forefinger, taking care to secure the little cluster of roots at the base of each.

As soon as the first crop of rooted shoots was removed other shoots quickly developed from these same eyes, and as these attained a length of a half inch to an inch they were taken off. This process was continued as long as new shoots kept showing. In all 40 plantlets were secured. These little plantlets were potted up into 3½ inch square

(Continued on page 94)

VICK'S

GARDEN and FLORAL GUIDE FOR 1918

IT'S FREE WRITE TODAY

Several New Features

Based on our experience as the oldest mail order seed concern and largest growers of Asters and other seeds in America. 500 acres and 12 greenhouses in best seed growing section. Our Guide is full of helpful information about planting, etc.—an invaluable aid to a successful garden. Illustrates and describes leading Vegetables, Flowers, Farm Seeds, Plants and Fruits. With our Guide, the best we have issued, we will gladly include interesting booklet, "A Liberty Garden."

Both are absolutely free.

Send for your copies to-day, before you forget.

For 25¢ we will include either our Superb Class And Color Aster Collection of three 20¢ packets, one each Perfection White, Mikado Rose and Autumn Glory (Pink.)

Or Our Finest Small Garden Vegetable Collection of six packets, one each Beets Vick's Early Market, early, best red; Carrot Danver's Half Long, extra fine quality; Onion Crystal White Wax, early, large, mild; Lettuce Big Boston, sure heading, delicious; Radish Vick's Scarlet Globe, most popular ever grown; Tomato Royal Red, very productive, deep rich color. For 50¢ both collections, and a packet of our famous Early Flowering Cosmos.

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On large orders of small fruit plants; large assortment of the BEST new and standard varieties to select from, including the BEST fall bearing kinds. 25 years' experience in propagating fruit plants, and every shipment backed by our ironclad guarantee. Send to-day for our free catalogue, showing eight pages of berries in their natural colors.

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Soon the dull browns of winter will give place to the delicate greens of spring—and the first hint comes when the lawn grass renews its growth.

Roots of lawn grasses make their best growth in early spring, and in the fall, when the days are cool. A quickly available, concentrated fertilizer, applied as soon as growth starts, supplies the food the plants need at this time, and will help them to withstand hot, dry summer weather.

Takoma Odorless Lawn Plant Food

is a highly concentrated fertilizer, containing all necessary elements in such form that the grass roots seize them quickly, and the effect is soon apparent.

Lower Costs and Larger Results

To fertilize an acre satisfactorily with stable manure requires 10 to 15 tons, making the average cost \$10; Sheep Manure, 1 to 2 tons, average cost \$10; Humus, 2 to 4 tons, average cost \$35; Bone Meal (highest grade), 1000 pounds, costing \$25; **Takoma Odorless Lawn Plant Food** only 400 pounds, costing \$18, the most economical material of all and the most efficacious.

Prices and Application

Takoma Odorless Plant Food is very concentrated, and should always be applied only one pound to every 100 square feet. Our 50 lb. package, sufficient for a lawn 50'x100', at \$4; bag lots in 100 lb. bags, at \$6.50 per bag, delivered by express anywhere east of Cleveland, Ohio. Acre quantities, 400 lbs. or more, at 4½¢ per pound f.o.b. Takoma Park, D. C., for shipment anywhere, by express or freight.

Send your order now; this is the proper time to apply the Plant Food. Can also be used on roses and other plants, and will keep indefinitely. Our booklet on "The Maintenance of Lawns" will be sent on request.

Odorless Plant Food Company

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Our Garden Plant Food will enable you to meet the present need for large yields from small areas. This is possible only when the soil has a plentiful supply of the necessary fertilizer elements. **Takoma Odorless Garden Plant Food** is concentrated, easy to use, efficacious, and absolutely odorless. Prices same as Lawn Plant Food; application same or more. This product also put up in 25 lb. packages at \$2 delivered east of Cleveland, Ohio.



THE policy of the *Bay State Nurseries* has never changed. After a quarter of a century of experience we believe in it more than ever. It is simply this: Give *Value for Value*. We can do this because we spend very little money on the selling end of our business but we spend liberally in growing and handling all our products. We have nearly 500 acres of ornamental nursery stock, but we employ no salesmen and spend but little in printers' ink. Don't look for any large display of advertising from us. Our money goes into the growing of our stock and we expect, as in the past, that our stock will sell our stock. Pleased customers are among our most valuable assets. Our 1918 catalogue is for the asking. Get one and send us a trial order. We will guarantee you satisfaction.

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Make Things Grow by Pruning

Here is a book, "The Little Pruning Book," that will help you. It is an authoritative guide to right pruning. This book will tell you how, when and where to prune. Pruning in the Flower Garden; Pruning Hedges and Vines, Fruit Trees, are among its eleven chapters of sound pruning advice.

The kind of shears you get is equally important. Pexto Pruning Shears will make pruning a pleasure. The easy grip and clear cutting are the things you'll appreciate most. You'll find Pexto Pruning Shears at your dealers. Look for the Pexto Tool displays.

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M. H. WALSH, Rose Specialist

Box 376

Woods Hole, Massachusetts

(Concluded from page 92)

paper pots, which were packed close together into the usual greenhouse wooden flats or shallow boxes. These were set away on shelves and given the usual greenhouse waterings till they were planted out June 8th.

The forty plants from the paper pots were set in forty separate hills in one row with about eighteen inches between the plants. The land which had not been broken for several years was plowed in the fall prior to planting and was disc-harrowed June 5th. It was not extra fertile, manure was not used for the potatoes, nor had any been applied to this soil at least for many years. Only a small amount of mixed fertilizer containing 8 per cent. nitrogen and 10 per cent. phosphoric acid was used along the row. The land contained considerable witch grass, the season was dry and the plants consequently at times suffered because of insufficient moisture. The row was hoed four times and sprayed twice with bordeaux mixture and lead arsenate.

The yield per hill was not large but the tubers were mostly of good size and smooth, many weighed ten, eleven and twelve ounces.

The method is interesting chiefly as it shows what can be done to increase quickly the stock of potatoes in times of great shortage or to increase rapidly "seed" of a new and valuable variety. The method can also be readily used to secure extra early potatoes from the home garden where one has the use of a few square feet of greenhouse bench space, or one may start the sprouting in a garden hotbed or even in a box of sand by the kitchen window, transferring the little plants as potted to a coldframe and later, as the weather warms up, to the garden.

NEW HAMPSHIRE. JAMES MACFARLANE.

Varietal Differences in Rhubarb?

USUALLY, people say, there are none!

And I never heard of anything that better illustrates the differences than the recent confession of a market gardener. This man annually sold hundreds of pounds of Red Mammoth, a coarse, hard, huge, intensely acid variety, to a local grocer who gave it to his customers *because they would need extra sugar to make it palatable!* I have never grown this variety nor the Green Mammoth but have grown Giant, a variety that with ordinary cultural care grew stems 24 to 30 inches long and as thick as my wrist, and from this fact, and others to be mentioned presently, judge the large varieties are inferior to the smaller ones. The best variety that I have grown for home use is Linnaeus, a rather late, small-stalked variety of mild acidity and fine texture. The next best with which I am acquainted is Victoria which is fully as attractive looking and nearly as good flavored as Linnaeus but much larger and more productive. I have not grown St. Martin's but have been told that it is rich, spicy, very juicy and much earlier than Linnaeus. Monarch, I am informed, is a coarse, acid kind similar to Giant. I have several times sown rhubarb seed to get plants, but though I have had fair stands I don't like this way because one has to wait too long to get edible stalks and also because the seedlings are very variable in size, productivity, acidity, texture, earliness, etc. The only way worth considering is to use plants grown from "eyes" or divisions of clumps known to produce stalks of good quality—really correctly named varieties so produced.—M. G. K.

Willadean Trees and Plants Will Grow For You!

From the time they are little "slips" or seedlings to the time that we dig, bale and ship the finished product, Willadean Plants, Shrubs and Trees are prepared to grow for you. Sudden climatic changes give our stock a constitution that cannot be claimed by plants grown under more favorable conditions.

155 Acres of Specimen Stock

A rigorous "weeding out" process is practiced in our nursery. Poorly shaped or stunted plants are done away with without compunction. Only the fit survive, and these are encouraged to develop perfectly by repeated transplanting, root-pruning, thorough cultivation, etc. The results are specimen plants in every way, in perfect physical condition for transplanting, well-shaped, ready to serve the purpose for which you may choose them.

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Readers in the territory tributary to Cincinnati, Louisville, Covington, Dayton, etc., will find us easily accessible. You may select your plants direct from the nursery row or from our catalogue with equal confidence that we will recommend to you only such plants as will do well under your climatic and soil conditions. Write for our catalogue TODAY sure and become acquainted with Willadean Service.

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"STRAWBERRY PLANTS THAT GROW"

"PROGRESSIVE" best Fall-Bearer; also standard June sorts including our new seedling, "COLLINS." Raspberry, Blackberry, and Grape Plants in Assortment. Catalogue Free.

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Also headquarters for Raspberries, Blackberries, Currants, Gooseberries, Grapes, Asparagus, Fruit Trees, Roses, Shrubs, Seed Potatoes, Eggs for Hatching, Crates, Baskets, etc. 35 years' experience. Catalogue free. Write to-day, address

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We recognize only too keenly that these are no times for "cut and tried" offers. It is not for us to tell our friends, our customers, what they should plant. It is rather our duty to help them decide what to plant that will prove most beneficial, most profitable as an investment and that will in most economical fashion serve the purpose for which it is intended. Tell us what your Spring planting plans are. We dedicate our time to help Garden Magazine readers do the right thing in the Garden.

value of a home within three years after planting. No stocks of legitimate business can ever point to a similar substantial rise in value in as short a time.

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Whether your needs call for group of Stately Evergreens, Avenues of Shade Trees, Orchards of Choicest Fruits or a limited number of Rhubarb Roots, we can take care of you in unrivalled fashion. Our Bloodgood Nurseries on Long Island render efficient services to all of New England. Our F & F Nurseries, in New Jersey, serve the country to the west in an economical fashion. Send all orders to address below, representing the selling end of these two well known organizations.

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Singer Building New York



A Garden Full of Vegetables for \$1.00



In preparing the following Home Garden Collection of Vegetable Seeds, which if purchased separately from our catalogue would cost \$1.55, we have given critical attention to the varieties offered, selecting only those which have been tried and proven of excellent merit under widely different conditions of soil and climate.

One Packet Each of the Following for \$1.00

Beans—Bountiful	Onion—White Portugal
Beans—New Hardy Wax	Parsley—Double Curled
Beans—Fodhook Bush Lima	Peas—McLean's Little Gem
Beet—Detroit Dark Red	Radish—Scarlet Globe
Carrot—Selected Chantenay	Radish—Long White Icicle
Corn—Golden Bantam	Spinach—New Zealand
Cucumber—White Spine	Swiss Chard—Giant Luculus
Lettuce—Black Seeded Simpson	Tomato—Selected Stone
Lettuce—May King	Turnip—White Globe

NOTE—With each collection we will send complete cultural directions. Also a copy of our interesting and instructive booklet, 16 pages and cover, devoted exclusively to vegetables.

ORDER YOUR COLLECTION NOW

Mail this advertisement with Check, Money Order, Dollar Bill or Stamps, or present at our store, and secure this excellent collection of Vegetable Seeds for only \$1.00 sent prepaid anywhere in the U.S.

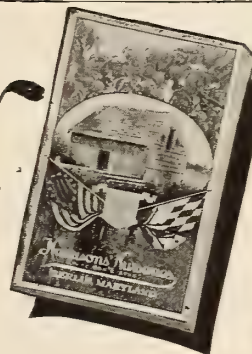
Our 1918 Spring Catalogue sent on request

Stump & Walter Co

30-32 Barclay Street

New York City

A free 80-page book that will help you



Get this Planting Guide

You will need it in making up your spring planting list. It's the product of 30 years' experience in growing trees that live and thrive. Contains 80 pages of valuable information—a valuable reference work worthy a place in your library. Shows why you should invest in sturdy well-grown trees from

Harrison's Nurseries
J. HARRISON & SONS, BERLIN, MARYLAND

Every tree is genuine Harrison-grown, with vigorous, compact root system and carefully shaped top. We offer splendid Evergreens and Deciduous Trees, also Flowering Shrubs, Vines, etc. Write us about your needs. Our Service Department will advise you free.

We also grow quality Fruit Trees, that are true to name and budded from bearing orchards. Grape Vines and Small Fruits.

Send a postal to-day for our 1918 Planting Guide. Planting time is near.

"Largest growers of fruit trees in the world"

HARRISON'S NURSERIES

BOX 56

BERLIN, MARYLAND



Garden Roses



MRS. JAS. LYNAS

A most valuable garden rose

Color; pearly pink at base of petal, flushed deeper shade at edges and on the reverse.

One of the best of over 125 varieties we catalogue for American Gardens. All are imported from Hugh Dickson, Ltd., Belfast, Ireland, and are strong, two year old plants.

As Imported Rose plants will be limited

in America this season, we urge those who are contemplating Rose Gardens this spring to place their order at once.

We must have all orders on file by MARCH 15th, to guarantee delivery for spring planting.

Standard Varieties: 60c per plant; \$6.00 per dozen; \$40.00 per hundred.

Our 1918 Illustrated Catalogue is now ready. It contains the finest list of

Roses and Chrysanthemums

in America, as well as

Hardy Perennial Plants

If interested, write for a copy—if you have not already received one.

CHARLES H. TOTTY CO.

MADISON

NEW JERSEY

COMING EVENTS CLUB & SOCIETY NEWS

Meetings and Lectures in March

(Following dates are meetings unless otherwise specified)

1. Pasadena, Cal., Horticultural Society.
2. Lake Geneva, Wis., Gardeners' & Foremen's Association.
4. Larchmont, N. Y., Garden Club. Meeting and Lecture.
5. New Bedford, Mass., Horticultural Society.
5. Maryland Garden Clubs of America, Maryland Council of Defense, Women's Section, Arundell Club Hall, Baltimore, Md. Lecture: Control of Rodents and Other Garden Pests.
- Garden Club of Pleasantville, N. Y.
6. Short Hills, N. J., Garden Club.
7. Marshfield, Mass., Garden Club.
8. Westchester, N. Y., & Fairfield, Conn., Horticultural Society.
- Connecticut Horticultural Society, Hartford, Conn.
9. Dobbs Ferry, N. Y., Horticultural Society.
11. New York Florists' Club, New York City.
- Park Garden Club, Flushing, L. I.
- Garden Club of New Rochelle, N. Y.
- Rochester, N. Y., Florists' Club.
13. Valdosta, Ga., Floral Club.
- Short Hills, N. J., Garden Club.
- Lenox, Mass., Horticultural Society.
- Nassau Co. Horticultural Society, Glen Cove, L. I.
- 13-17. Massachusetts Hort. Society, Horticultural Hall, Boston. Grand Spring Exhibition.
- 14-21. Under the auspices of the Horticultural Society of New York and the New York Florists' Club. International Flower Show, Grand Central Palace, New York City.
15. Dahlia Society of California, Palace Hotel, San Francisco.
- Pasadena, Cal., Horticultural Society.
16. Lake Geneva, Wis., Gardeners' & Foremen's Association.
19. Maryland Garden Clubs of America, Maryland Council of Defense, Women's Section, Arundell Club Hall, Baltimore, Md. Lecture: Planting, and Planting the Garden.
- Gardeners' & Florists' Club of Boston, Horticultural Hall, Boston.
20. Rhode Island Horticultural Society, Providence, R. I.
- Short Hills, N. J., Garden Club.
- Tarrytown, N. Y., Horticultural Society.
21. Salisbury Conn., Garden Club, Subject: Garden Accessories.
21. Marshfield, Mass., Garden Club.
22. Connecticut Horticultural Society, Hartford, Conn.
23. Dobbs Ferry, N. Y., Horticultural Society.
25. Park Garden Club, Flushing, L. I. Lecture: How Garden Clubs Can Help the Government.
26. Maryland Garden Clubs of America, Maryland Council of Defense, Women's Section, Arundell Club Hall, Baltimore, Md. Lecture: to be announced later.
27. Short Hills, N. J., Garden Club.

National Flower Show Deferred

TAKING note of the general conditions of traffic and the probable difficulties that might be encountered, the managers of the Fifth National Flower Show, which was to have taken place at St. Louis, Mo., next month, have decided to postpone the event to some later date when conditions are adjudged to be more generally favorable. This action of the National Committee will, we feel sure, meet with the approval of horticulturists generally. It is understood, of course, that the next National Flower Show, whenever it may be held, will take place at St. Louis.

The annual Trade Convention of the Society of American Florists, which was to be held concurrently with the Flower Show will probably take place as originally arranged at St. Louis opening April 9th; but the date may be set back to August as in previous years.

American Rose Society Comes to New York

IN CONSEQUENCE of the foregoing change of date the American Rose Society has made arrangements to hold its annual exhibition and meeting in connection with the International Flower Show in the Grand Central Palace, New York, March 14th to 21st. Other arrangements for the Rose Society during this year include an outdoor meeting at Elizabeth Park, Hartford, Conn., in connection with the Rose Test Garden established there. The exact date will be fixed later—sometime in June.

(Continued on page 98)

Nursery Firm Promises Unusual Catalogue

Old Established Firm Announces Early Publication of Helpful Book

GARDEN owners everywhere will be delighted at the news that the old established Framingham Nurseries are about to issue a book for distribution among garden lovers which will mark a step in advance of anything that has ever appeared in this country before, for interest, helpfulness and conciseness.

The Framingham Nurseries several years ago came under new management, which, while adhering to the ideals of the old has introduced new ideas which have placed The Framingham Nurseries among the leaders in the nursery industry. In introducing a number of progressive ideas the matter of a catalogue naturally came up for discussion, with the result that there will soon be published a book of unusual charm and character, which will not be a catalogue in the ordinary sense of the word, but rather a book of helpful hints.

Instead of being a botanical dictionary or an uninteresting directory of all the plants and shrubs that are grown in Framingham Nurseries—(and the nurseries cover five-hundred acres and have been established since 1894)—it will present in a manner both lucid and picturesque, suggestions of nursery stock listed under the adaptability of each. Thus the reader can turn to foundation planting and find a number of plans for planting an attractive foundation with lists of varieties, prices, sketches of the finished result, etc.

Everything will be so arranged as to furnish the greatest volume of usable information in the most understandable form.

Because the edition will be limited it is asked of those interested that they send early application for their copies. It is the hope that all who are really interested may have copies sent to them immediately upon publication, which will be the latter part of March.

By addressing your letter now to the Framingham Nurseries, Framingham, Mass., you will be sure to receive a copy immediately upon publication. Please say, "Send me your Garden Book, as advertised in March Garden Magazine."

Buy Wisely

Huntington Quality Seeds, Bulbs, Plants, Roses, and other good things for the particular gardener, are offered at prices certain to attract the wise buyer.

To buy at the lowest price is often poor judgment, but suppose we take all the risk, and offer to refund or replace anything not perfectly satisfactory. Order anything here or from our catalogue subject to your inspection. We want a share of your 1918 orders and of those in the years to come and we are willing to do our part to get and to keep your good will.

Here is a few "get acquainted" offers taken from the bargain page of our 1918 catalogue.

Gladiolus Offer No. 1, 6 America, 6 Baron Hulot, 6 Empress of India, 6 Mrs. F. King, 6 Independence, 6 Augusta; 36 bulbs guaranteed to bloom for **\$1.00 delivered.**

Gladiolus Offer No. 2, 2 Peace, 2 Panama, 2 Niagara, 2 Chicago White, 2 Fred Wigman, 2 Faust, 2 Attraction, 2 Willy Wigman, 2 Glory of Holland; 18 bulbs guaranteed to bloom for **\$1.00 delivered.**

Gladiolus Offer No. 3, 1 Pink Perfection, 1 Europa, 1 War, 1 Schwaben, 1 Mrs. Watt, 1 Loveliness, 1 Golden King, 1 Norma dea Childs, 1 Rouge Torch; 9 fine sorts guaranteed to bloom for **\$1.00 delivered.**

Special Phlox Offer, 1 Eiffel Tower, 1 Europa, 1 Frau Antone Buchner, 1 Jules Cambon, 1 R. Von Hochberg, 1 Sieboldii, 1 Pantheon; 7 fine field grown sorts for **\$1.00 delivered.**

Special Iris Offer, 1 Tamerlane, 1 Princess of Wales, 1 Isolene, 1 Caprice, 1 Rhein Nixe, 1 Midnight; 6 fine sorts for **\$1.00 delivered.**

We are willing to abide by your decision as to the quality of any of the items offered here, or in our catalogue, which offers hundreds of items that would interest you. Free for a postal.

Ralph E. Huntington
Painesville, Ohio

SELL YOUR SPARE TIME

We will pay you well for all you have—every spare hour can mean money—by securing new subscribers to the World's Work The New Country Life, and The Garden Magazine. Write to Circulation Dept.

Doubleday, Page & Company, Garden City, New York

Privacy!

You're missing half the fun and comfort of country life if your home grounds aren't shut off from the rest of the world by a wall of green English fashion—remember Anne Hathaway's cottage? Charm, cozy comfort, seclusion, repose—they're all yours, cheaply and lastingly summer and winter, if you have us plant a pine hedge ready-made in a week's magic work—making a living-room out of your present exposed lawn. Get the most out of your country investment. Call, phone, or write, for fuller details.

I. HICKS & SON
"Sixty Years of Knowing How"
WESTBURY (Phone 68) L.I.



Moon's Made My Garden

"Nothing can compare with my garden! It is my delight, and the envy of my neighbors.

"Yet how easily they, too, could have a lawn and garden like mine, and how many happy hours they could spend as I do with my flowers.

"Not all flowering plants in my garden—they must wither in time. Some sturdy evergreens that always turn their trim cheerfulness skyward.

"You will find at Moon's varieties of almost every plant you could desire.

"For forty-five years they have been raising trees and shrubbery which, for variety in assortment, shapeliness of form and vigor of growth are unexcelled any-

where. They have a tree or plant for every place and purpose.

"By all means send for Catalogue B-3. It will help solve your lawn and garden problems. This is Spring planting time." Address

THE WM. H. MOON COMPANY, Nurserymen, MORRISVILLE, PA.
Philadelphia Office, 21 South Twelfth Street The Moon Nursery Corporation, White Plains, New York

Roses and Gladioli

These are two of the finest garden flowers known. My home grown stock has demonstrated its superiority in thousands of gardens. Try them in yours. My new catalogue tells a very interesting story about the function of roots. It will interest you. It will help you to greater gardening success.

A.B. Vanderbeek
Roses

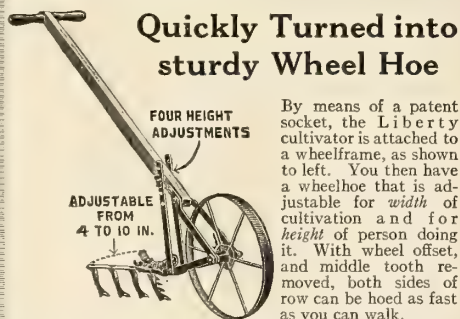
172 Broadway, Paterson, N. J.





The Liberty Cultivator Weeder you have been wishing for

A seven-toothed cultivator that will help you maintain a weedless garden throughout the season, with least labor. Light, yet powerful; made for thorough work and hardest use. Easily and quickly adjusted to from 4" to 10" width. With middle tooth removed, it will cultivate both sides of row at once.

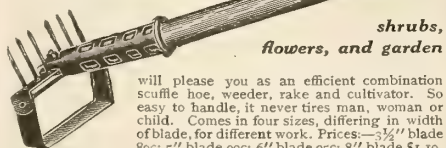


Quickly Turned into sturdy Wheel Hoe

By means of a patent socket, the Liberty cultivator is attached to a wheel frame, as shown to left. You then have a wheelhoe that is adjustable for width of cultivation and for height of person doing it. With wheel offset, and middle tooth removed, both sides of row can be hoed as fast as you can walk.

Prices: Adjustable Liberty Cultivator Weeder, with 5 feet long polished ash handle \$1.50. With special wheel attachment, complete, as shown above, \$3.00.

The Gilson Weeder for close work, among



shrubs,
flowers, and garden

will please you as an efficient combination scuffle hoe, weeder, rake and cultivator. So easy to handle, it never tires man, woman or child. Comes in four sizes, differing in width of blade, for different work. Prices:—3½" blade 80c; 5" blade 90c; 6" blade 95c; 8" blade \$1.10.

Send for Circular—NOW!

Learn all about our complete line of labor savers in the garden. Ask your dealer to see them or write us direct. Tell us which tool interests you most and we will send full information—FREE. Don't accept a substitute.

J. E. GILSON CO., Port Washington, Wis.

(Concluded from page 96)

International Flower Show, New York

THE Annual International Flower Show will be held in the Grand Central Palace, in New York, March 14th to 21st, as previously announced. And, as in former years, the Tea Garden feature, for the benefit of the Red Cross, will be one of the major attractions. The management offers some interesting novelties in arrangement and spectacular floral display. Formal Rose Gardens will again be featured and other groups of flowering plants in artistic arrangements.

Not the least attractive feature will be a "wargarden" in action, which is promised as the contribution from one of the large residential estates of New Jersey. This will occupy several hundred square feet and will represent a typical vegetable garden as planned to meet the exigencies of the times. The plant lover and curio hunter will find in the Orchid displays the usual interest that properly belongs to these fantastic plants.

Visitors may rest assured that they will see typical displays of the season's floral novelties.

American Gladiolus Society Membership Campaign

ON FEBRUARY 1st Mr. A. E. Kunderd, Goshen, Ind., President of the Society, started the wheels moving for a five-months' aggressive membership campaign, with the idea that the newly made food gardeners may be initiated in the delights of growing the Gladiolus, "Flower Growing as a Relaxation from the Stress of War." The Membership Committee is under the leadership of J. J. Lane of THE GARDEN MAGAZINE. In order to encourage action the Executive Committee has authorized the waiving of the initiation fee during this period.

International Garden Club

THE second part of the *Journal* (Vol. 1, No. 2) issued under date of December, follows closely upon its predecessor. It contains many articles of real interest and shows much improvement over the earlier issue. George C. Thomas reviews the new introductions of outdoor Roses. Dr. Van Fleet speaks of the possibility and production of American garden Roses. John Scheepers writes on the planting of May flowering Tulips. Alexander Lurie writes on tree surgery. The volume is freely illustrated, including color plates of some recent Roses. A Guide to the Literature of Pomology by E. A. Bunyard is an important contribution. The volume is illustrated with color plates.

Nurserymen Offer Expert Advice

IN ORDER to contribute "their bit" to the national need the members of the Ornamental Growers' Association recently adopted the following resolutions:

Whereas, the successful prosecution of the war in which our country is engaged will overtax our normal food production if we are to supply our people at home and our allies abroad, and

Whereas, throughout every state and section of the nation there are scores of millions of fruit trees of mature and bearing size and age that would bring within the reach and purchasing power of the most humble of our citizens hundreds of millions of bushels of fruit in excess of the normal production during the season of 1918, without the entailment of great expense or the encumbering of our already crowded transportation facilities,

Therefore, be it resolved, that we nurserymen in conference assembled tender our service gratuitously to the owners of fruit trees everywhere in the matter of instruction for the immediate rejuvenation of barren and under-productive trees to make them fully productive. We urge nurserymen everywhere to render this patriotic service whenever and wherever possible to increase the production of fruit as food from present orchards for the winning of America's war. We respectfully suggest that the national and state food administrators include in all their propaganda for increased food production this agitation and admonition to spray, prune, cultivate, fertilize and otherwise so handle as to bring into full and immediate production all orchards and fruit trees of whatever kind or wherever located.

PENNSYLVANIA Quality LAWN MOWERS

LAWN mower blades must be sharp *all the time* to cut clean and easily—like razor blades they drag and chop when dull.

Only "PENNSYLVANIA" Quality Lawn Mowers use crucible tool steel (oil-hardened and water tempered) in *all* blades—steel which takes and keeps an edge. Being self-sharpening they are *all sharp all the time*.

Sold by Hardware Dealers
and Seedsman

FREE—A booklet—"How to
Care for the Lawn"—written by
an authority, mailed on request.

PENNSYLVANIA LAWN MOWER WORKS
1617 N. Twenty-third St., Philadelphia



This trade-mark is on the handles of

"Pennsylvania"	"Quaker City"
"Pennsylvania, Jr."	"Red Cloud"
"Pennsylvania Golf"	"Bellevue"
"Pennsylvania Putting Greens Mower"	"Panama"
"Continental"	"Delta"
"Keystone"	"Electra"
"Great American B. B."	"Pennsylvania Pony"
"Shock Absorber"	"Pennsylvania Horse"
	"Pennsylvania Grand"
	"Pennsylvania Trio"

Food Will Win the War

DAHLIAS OF DISTINCTION

You want the new mammoth kinds that will win the prizes. I have lately originated over 200 gorgeous new dahlias which I am offering in my new catalogue. Stillman's dahlias are world known. Get a copy of my new descriptive catalogue and guide, free. Over 1400 kinds grown last season.

GEO. L. STILLMAN, Dahlia Specialist
Westerly, R. I. Box C-8



Gladiolus "Echo" Color a true mauve. A rare beauty. Each, \$2.00

Gladiolus Kunderdi

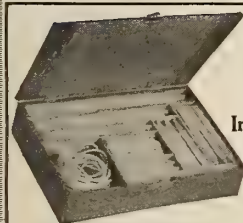
Our 1918 catalogue contains 93 wonderful new varieties all offered now for the first time.

Nearly 300 varieties are described. All of our own creation. Most of them can be obtained only from us. No other strains of Gladiolus can compare with these.

Send for our 52 page free catalogue. It contains 24 illustrations. You are not up to date without it.

*The wonderful new races
Originated by*

A. E. KUNDERD
of Goshen Indiana



Garden Insurance

In Knowing WHEN, WHERE
and WHAT You Planted

Labels are the "systematizers" that help you keep track of your Garden and here you have a complete assortment of more than 300 GARDEN LABELS from the little 3/4-inch copper-wired one for marking individual trees, shrubs or plants, to the big 12-inch Label for marking Garden rows,—indeed, a Label for every purpose and two marking pencils.

Also you must have straight rows in the Garden for straight rows grow better, look better, and "work" easier with the gain in space that comes with orderly arrangement. So in this same box you will find coiled 100 feet of the VERY BEST BRAIDED COTTON GARDEN LINE.

The LABELS, GARDEN LINE and PENCILS are very substantial and attractively packed in a hardwood box.

A Most Acceptable, Useful and Unique Gift

The Price is \$3.75 All Delivery Charges Paid

C. H. GORDINIER, Troy, N. Y.

ASSORTED MARKERS



King Greenhouses and Conservatories



Sun Room built for Mrs. D. P. Rumsey, Buffalo, N. Y., showing how the King Construction can be made to harmonize with architectural detail.

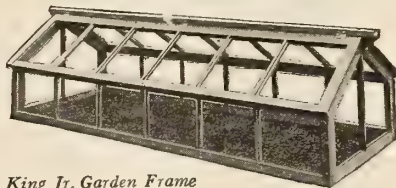
A Sun Room lends a subtle atmosphere of Dignity and Charm to the Home. More than that, on the long Winter days when filled with Flowers and Plants, Flooded with Sunshine, resounding with happy voices, the Sun Room draws together family and friends and makes each individual reflect its bright happy cheerfulness.

King Conservatories, and Greenhouses have a special type of construction with graceful sweeping lines which can be adapted to any style of architecture or landscape arrangement. This construction also permits of great strength without the need of heavy shadow casting supports so that the flowers and plants get all the Sunlight from early morning till late afternoon.

Pictures tell the story better than words. Let us send our Picture Catalogue Number 52 where you are bound to find suggestions which will help you in telling us what you, yourself would like. This handsome book will be sent on request.

We take pride in being able to supply everything to aid you in growing plants. Our Garden Frames and Little Bay-windows are just as carefully planned as our Greenhouses. Years of

building for professional growers have shown us how to build to produce maximum plant growth—that's why every King is practical. If you are interested in Garden Frames or the King Bay window idea, write for Bulletin Number 42A, a book every lover of a Garden should have.



King Jr. Garden Frame



King Bay Window

KING CONSTRUCTION COMPANY, 403 King's Road, North Tonawanda, N. Y.

All the Sunlight all Day Houses

Branch Offices:

New York, 1476 Broadway
Philadelphia, Harrison Building, 15th and Market Sts.

Boston, 113 State Street
Scranton, 307 Irving Ave.

Attention Gardeners

Whether you grow things to eat or to sell you must start now to get ready.

Glass is high, but cypress is comparatively cheap and sashes, cold-frames, hot-beds and small greenhouses were never so profitable in every sense as they will be this season. The Nation needs them.

Our Catalogue gives all details. Immediate shipment. Open sash are light and may go by express. Write at once.

GET



for Hot-beds
and Cold-frames

Sunlight Double Glass Sash Co.
927 E. Broadway Louisville, Ky.

Mastick Dahlias

are distinctly original; and famous for their wondrous beauty of form and coloring. I offer a limited number of

"Fantastique"—Orchid Paeony @ \$3.00 each
"Geo. H. Mastick"—Hybrid Paeony @ \$3.00 each

These were recommended for the "Award of Merit" (highest award) by American Dahlia Society, New York, Sept., 1917. Have other "Mastick" creations; also the best American and Foreign varieties. Catalogue.

M. G. TYLER

1660 Derby Street Portland, Oregon.



The
Pakro Package

SOON IT WILL BE GARDEN TIME

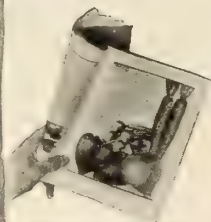
Yes, soon there will be a touch of Spring in the air and then—how about the garden? This year, more than ever, it must be a war garden. The crops from the big farms must go to feed the boys "over there"—the home garden must do its bit in a bigger way than ever before. It must be planted with a certainty as to results.

PAKRO
SEEDTAPE
AND SEEDS
FOR BETTER GARDENS

Pakro Seedtape will help you have a better garden. It is the scientific way of planting. The seeds are evenly and accurately spaced in a thin paper tape. And a whole row is planted at a time, resulting in straight rows of evenly spaced plants. Thinning out is practically eliminated.

Pakro loose seeds are the same Quality Seeds that are in the tape. A Pakro garden, either Pakro Seedtape or Pakro Loose Seeds, is a successful garden. Your dealer has 118 varieties of Pakro Seedtape and Seeds. Order your seeds today.

AMERICAN SEEDTAPE COMPANY
Pakro Bldg., 364 Ogden St., Newark, N. J.



Write today for the beautiful Pakro catalog. The illustrations are from actual photographs and reproduced in actual colors. It will help you to have a better garden. This catalog will be sent immediately upon your request without charge and prepaid.

WANTED—A man of experience to take charge of large vegetable garden. Carl W. Buckler, Glenwood, Ill.



Free!

A 50-gallon barrel of Scalecide free to any one who will suggest a fairer guarantee than that given below.

"SCALECIDE"

As proof of our confidence and to strengthen yours, we will make the following proposition to any fruit grower of average honesty and veracity. Divide your orchard in half, no matter how large or small. Spray one-half with "SCALECIDE," and the other with Lime-Sulfur for three years, everything else being equal. If at the end of that time, three disinterested fruit growers say that the part sprayed with "SCALECIDE" is not in every way better than that sprayed with Lime-Sulfur, we will return you the money you paid us for the "SCALECIDE."

Send for new free booklet,
"Fruits in Fall Spraying."

B. G. Pratt Co., Mfg Chemists
50 Church St., Dept. I, New York

For the South

THIS is the month when one puts into effect the plan made on paper in January. It is the beginning of the outdoor season for our part of the country.

Permanent Beds

IT IS easy to raise asparagus from seed, and to cut the shoots quite as soon as from a bed made by transplanting roots. At the end of March after getting the ground in fine condition make trenches five feet apart, two feet deep and two feet wide, (just as has been advised for planting roots). Put in six inches of well rotted cow manure, with four inches of good garden soil on top of that, and sow the asparagus seed thinly, pressing down with the foot. Fill in the trenches gradually, i. e. a little each spring. Do not cut to any extent for three years. Fertilize each spring. If white asparagus is desired make mounds over the rows, but if the green shoots are preferred it is better to cultivate level.

Strawberries should be worked and a well balanced commercial fertilizer applied. Avoid fertilizers which contain much nitrogen or the plants will go to leaf. Strawberries need acid phosphate and potash; for this reason wood ashes are excellent to be raked around them as it supplies the potash. Thin out the old bed and plant over a new bed. Rows should be three feet apart. Put pine tags under the leaves to prevent fruit from getting sandy. The St. Louis is a well flavored Strawberry for the home garden, but not firm enough for shipping. The Richmond is a good berry.

Make the herb bed either by sowing seed in hotbed or coldframe and transplanting later into open ground, or buying plants outright the end of March to plant in garden. Sage, thyme, sweet marjoram, and savory are desirable for seasonings. Near the herb bed have a short row of horse-radish and a row of chives; the latter is a great addition to salads and soups and the former to pickles, meat relishes and sauces.

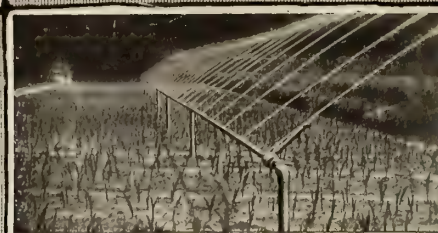
First Early Vegetables

IF IRISH potatoes were not planted the last of February get them into the ground as quickly as possible. They like a warm, loamy, well drained soil with plenty of acid phosphate and potash—hard wood ashes will supply the latter, the necessary ashes will be on hand if conserved throughout the winter as was advised in December number of GARDEN MAGAZINE. Nothing could be better than a compact heap made of leaves, trash, soil and manure mixed with acid phosphate and spread in the furrows before planting the potatoes. Early White Rose, Eureka, and Irish Cobbler are all good varieties. Continue to plant smooth variety of peas (Alaska type), and by the end of the month sow some of the tender sorts; Champion of England has stood the test of time. The latter part of month sow in the open the hardy vegetables such as radishes, Hanson lettuce, round thick leaved spinach, smooth spring kale; and the long season vegetables, carrots, parsnips and salsify. Set out cabbage plants, Jerusalem artichokes, sets of yellow Danvers onions, and rhubarb.

Working the Coldframes

Seed sowed in February should now be transplanted into the coldframes. Pick out seedlings from hotbed when they have two leaves and carefully plant three inches apart in the well pulverized soil of the coldframes;

(Continued on page 102)



Skinner System Sprinkling Line in garden of Alfred I. DuPont, Wilmington, Del.

Don't let Drought Defeat Your 1918 Garden Hopes

MANY 1917 gardens failed for just one reason—lack of proper watering. Rain didn't fall. Owner didn't have time to water his garden thoroughly himself. The hose watering he did do, failed to give his plants the gentle, uniform spray they required.

Make such a failure impossible in 1918. Make your garden water itself and do so correctly. Do so by installing the Skinner System of Irrigation. All you have to do is turn a valve—the System does the rest. Waters your plants with a fine, uniform spray like heaven's own rains.

Means sure crops. Better crops. Bigger crops. Earlier crops.

As a starter, send \$18.75 for 50 foot Sectional and Movable Garden Sprinkling Line. Water space 50 feet square.

Catalogue sent on request.

The Skinner Irrigation Co.

219
Water
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Troy
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SKINNER
SYSTEM
OF IRRIGATION.

N. Y. Division Agency: 37 Warren St.

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Stock always on hand

"HOW TO GROW ROSES"—Library Edition; 121 pages—16 in natural colors. Not a catalogue. Price \$1, refunded on \$5 order for plants. The Conard & Jones Co., Box 24, West Grove, Pa.



Our sure growing evergreens lend a finished touch to any home. For 56 years we have been furnishing choice, hardy evergreens to people all over America. We offer you the choice of the greatest evergreen stock in the world—over 50,000,000 evergreens on hand.

We give expert advice free—furnish suggestions on tree arrangement. Write for Handsomely Illustrated Evergreen Book—trees shown in true-to-life colors—Free! Get the Book. Don't risk failure with evergreens of uncertain quality. Get the book and get posted.

D. HILL NURSERY CO.

Evergreen Specialists

BOX 1066

DUNDEE, ILL.



"Um-m-m-m!"

NO WONDER it's so juicy-jammy and sweet!—It's made from fruit picked right from the "backyard" from a Hicks Fruit-tree.—And we say with all the experience and prestige gained from sixty years of service to home gardeners, that the fruit you will pick from the Hicks Trees you plant in your back or front yard will be ever so much fresher, juicier, sweeter and more luscious—tastier in every way—than the market fruit you buy! To say nothing of the very considerable saving in money (not to be despised in these days) and the fun of growing your own—and the fun for the kiddies—and the enhancement of the beauty, shade, and property value of your home!

Don't worry about having room enough for fruit trees on your lawn. Flower, vegetable, and fruit gardening can be combined on the very smallest suburban lot—our new book, "Home Landscapes," free on request, will show you how. Meanwhile just to prove that a small outlay will go a great ways in fruit-gardening, here's a special \$5 offer (for immediate acceptance): 2 Apple Trees, 1 Pear, 1 Plum, 5 Grape Vines, 25 Raspberries, 5 Rhubarb, 5 Currants—all for \$5.00, if you act soon! And send for the free book anyway, to-day.

I. Hicks & Son "Sixty Years of Knowing How" Westbury, L. I.

As we would like to have you know The Good & Reese Co.

"Plantsmen to the American People"

For nearly half a century we have likened our business to a big plant store devoted to filling the floral desires of American garden makers.

From a modest beginning, this plant store has grown to be an establishment covering 100 acres outdoors, while over a hundred large greenhouses put several acres under glass. In this vast workshop we grow, year after year, millions of Roses, Gladioli, Begonias, Dahlias, Peonies, and scores of other flowering plants. The annual growing of more than seven million roses alone has earned us the undisputed title of

Largest Rose Growers in the World

From Springfield, of which we proudly think as the greatest floral center, Good & Reese Roses, Bulbs, Roots and Plants are shipped to all parts of the world. To satisfactorily serve planters in many countries and sections, we grow a vast number of kinds to suit different fancies. Nearly 500 distinct varieties of Roses alone are growing

in our nurseries, and we are sure some of them will please you. All of them are grown on their own roots and in such

quantities as to make their cost trifling. We offer the Superb Collection of 6 Ever-blooming Roses, 6 colors for \$1.00. Will bloom this summer.

Millions of Gladioli

Over forty different kinds to select from, and every one a peer in its class. Gladioli are the easiest of all flowers to grow. They thrive and bloom most anywhere in this country, in any soil. Few flowers will make a greater show at a smaller cost, and you are bound to succeed with the fine, big bulbs such as we grow by the millions.

OFFER: We will mail, postpaid, one bulb each of six superb sorts, namely America, Pink Beauty, Baron Hulot, Mrs. Frances King, Augusta, and Annie Wigman for 30c. Or, a set of our forty choicest varieties for \$2.75. A greater bargain than this is not obtainable anywhere.

Fifteen Acres of Dahlias Every Year

Such hobbies as we have, we ride hard. We are very fond of Dahlias and grow the best kinds in every class. Dahlias are among the most dependable flowers to bloom, and the roots we supply are full of vitality and blooming power.

OFFER: We will mail, postpaid, our "Bouquet" set of seven magnificent Dahlias, all different kinds of different colors, for \$1.25. Over fifty other kinds to select from.

Get Our Free Catalogue

A modest book containing the most remarkable bargain offers ever made in flowering bulbs, plants, roses, etc. Be sure to write for your copy at once—it will save you money in your garden these in the world. Both books are yours free for the asking. Make sure of them by writing TODAY.

The Good & Reese Co.

Bulb and Plant Specialists

Box 44

Springfield, Ohio

This 72-page Garden Handbook

illustrates and describes 160 sturdily-built weather-resisting pieces for the garden, which we ship by express to all parts of the nation (express allowed east of Mississippi River).

Based on accurate artistic knowledge and made by hand, gardencraft pergolas, summer-houses, trellises, trellis

fences, Japanese woodwork, arbors, seats

and sunset arbors are famous the world over for artistic excellence.

The handbook with 1918 supplement will be mailed you on receipt of 50 cents, stamps or coin (to be deducted from first order), to cover printing cost and postage.

Ask for Catalogue A

THE MATHEWS MFG. COMPANY, Lakewood, Cleveland, Ohio



planning. We also publish a unique brochure entitled "Peonies for Pleasure" which tells all about one of the greatest collections of quality kinds and the largest stocks of these in the world. Both books are yours free for the asking. Make sure of them by writing TODAY.

Springfield, Ohio
THE
FLORAL CENTER
OF THE WORLD
20 million Plants Sold
Each Year, Seven Mil-
lion of which are Roses

THORBURN'S SEEDS

1918

GTS

J. M. THORBURN & CO.

53 BARCLAY STREET

NEW YORK CITY

You Want a Better Vegetable Garden This Year: and Some Flowers Too

FOR the best results in your vegetable garden, for the most delicious flavor and richness, for correct size and splendid shape of the products you grow, it is essential that you get the best seeds.

Thorburn's seeds have been famous for over a century for quality.

They are selected and tested and will produce a garden which will delight you and will provide fresh, wholesome vegetables at a trifling cost.

Growing your own food helps win the war.

Send 10 cts. for a generous package of Delphinium Newport Rose, a very beautiful annual pink Larkspur; or 10 cts. for a package of the brilliant, scarlet Celosia Plumosa Pompon (Chinese Woolflower).

Also write today for our 1918 free illustrated catalogue. It is full of useful information and helpful suggestions for a successful garden.

J. M. THORBURN & CO.

Established 1802

53B Barclay Street

Through to 54 Park Place

New York

(Concluded from page 100)

water carefully so as not to beat down the little plants; cover the frames with the sash and also a cloth to keep out the sun for several days until the plants recover from the shock of transplanting—then remove the cloth cover. If a few plants of an early variety of tomatoes were transplanted into four-inch pots and sunk into the earth of the coldframes they would not undergo a second shock when transplanted in May in the open ground. The hotbed can now be used for later varieties of tomatoes such as Brimmer, Livingston's Globe, Stone, and Matchless.

Planting Fruits and Ornamentals

ALL stone fruits (plums, apricots, nectarines and peaches) should be planted in early spring. The Mayflower is an early and juicy peach and The Hale is also considered a fine variety.

Although with great care fine specimens of evergreens with balls of earth wrapped about the roots in bagging have been successfully planted in this climate in the fall, the present month is the ideal month for planting evergreens. This is especially the case in transplanting evergreens from the woods. See March, 1916, GARDEN MAGAZINE.

Pruning and Spraying of Shrubs, Vines, and Trees

NEW Roses should be planted the end of the month, especially the tender varieties. Prune old plants (See page 68). The Hybrid Perpetuals do better under severe pruning, for besides cutting out the old wood they should be cut down one half their height. Handsomer Roses will be the result, though, under light pruning there will be more abundant blooms. After raking between the bushes and digging in a well-rotted cow manure, sprinkle soot about the base of the bushes, then spray them with bordeaux mixture and arsenate of lead. All Climbing Roses should be lightly pruned and thoroughly sprayed with bordeaux as a precaution against mildew; with arsenate of lead to destroy larvae of the Rose chafer and any other destructive insects.

Present Pruning Needs

ONLY late-blooming shrubs should be pruned this month, the early flowering spring shrubs must be left severely alone, to be pruned immediately after blooming.

Prune grape vines the end of February or the first of March, but at any rate before the buds swell. Cut back all new growth to two buds or spurs; cut out all weak shoots entirely; and those that start up from the roots. Tie the vines to horizontal wires stretched from posts six to eight feet apart. Another pruning in necessary in early summer. Cut away the long curly tendrils and any superfluous leaves to let in the sun; also cut off any imperfect bunches leaving well shaped ones and only as many as the vine can nourish.

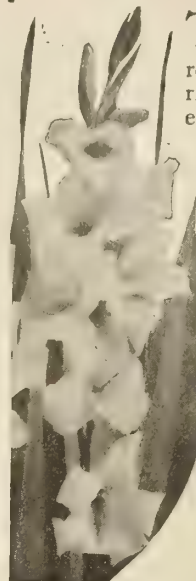
Fertilizers are very necessary—a cover crop of clover planted in the fall and plowed under in the spring is very good. If that was not done apply now acid phosphate mixed with chicken or cow manure and some potash if procurable. Remember hard wood ashes are most valuable in orchard and garden. Spray with bordeaux now and every ten days or two weeks to prevent grape rot.

The orchard should have constant spraying. Bordeaux with arsenate of lead is effectual, summer strength; lime-sulphur is also highly recommended; as is also Black Leaf 40, for blight, scale, and insects.

VIRGINIA.

J. M. PATTERSON.

Do You Know the Delights of a "Glad" Garden



THERE is an allurements about the Gladiolus. The reedy foliage; the stiff, upright spike clothed with flowers of sunset tints; its superb qualities when cut—all make the Gladiolus one of our favored flowers.

At Meadowvale Farms I have one of the world's choicest Gladiolus collections. It is a delight for me to walk through my fields, discovering nearly every day some new color or combination. My booklet "The Glory of the Garden" will tell you about all these wonders. A copy is ready to mail on receipt of your name and address.

ARTHUR COWEE

BOX 218 Gladiolus Specialist BERLIN, N. Y.

Salesmen Wanted

We prefer greenhouse men for our salesmen. If you can make good selling an established line of greenhouse supplies, we have openings in our sales organization. Previous sales experience is desirable, but not necessary. What we want are greenhouse men who understand greenhouse problems and can talk intelligently to the greenhouse trade. In writing us, give age, references, salary expected and territory you are familiar with. Address

Box 122, The Garden Magazine



Our Spring Gardenbook

Contains lists and descriptions of: Desirable 1918 Novelties, Vegetable and Flowerseeds, Novelties in Japan Vegetable seeds, Flowering bulbs and roots, Amaryllis, Crinum, Dahlias, Gladioli, Iris, Paeonias, etc.

Our specialties are Hardy Beautiful Lilies, Hardy Perennial Plants and Vines

We carry large stock of Japan Bamboo stakes, Fertilizers, Insecticides, etc. Send for your COPY TO-DAY.

H. H. BERGER & CO., 70 Warren Street, New York

Thomas MEEHAN & Sons

Nurserymen Horticulturists

Whatever your planting need may be we will gladly advise you. Let us send you our free plan of service for the nursery.

Landscape Engineers and Nurserymen

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Pioneer Nurserymen of America



A Practical Lawn and Garden Edger

Of all the simple labor-saving devices on the market to-day, this ranks among the most practical.

Mason's Lawn and Garden Edger—a Garden Necessity

It is simple, adjustable, durable and practically indestructible. The knife is made of carbon steel hardened and tempered in form and is easily removed to sharpen. It makes a clean, smooth cut, about an inch and a quarter wide and from an inch to about two inches deep.

It is indispensable for trimming around the edges of Flower Beds or along the sides of Hedges. Simply remove and reverse the blade and you have a tool that will trim and cultivate at the same time.

Price, \$1.50 Postpaid. Satisfaction Guaranteed

This Tool Saves its Cost in One Day's Work.
Send for Descriptive Circular TO-DAY.

The M. F. C. Manufacturing Co., Davenport, Ia.

DREER'S "Gold Medal" Gladiolus

We grow this magnificent strain for the express purpose of being able to supply those who want the very best mixture possible.

When Gladioli are grown in mixture they are liable to deteriorate rapidly and finally contain but a few colors.

To avoid this we grow small blocks of a large number of exquisite high-grade sorts from which this mixture is made and which embraces all colors from the richest reds through all the intermediate tones of pink, rose, salmon, blush, white, yellow to the new blue, heliotrope and "pansy colors." Indeed so great is the diversity of colors that there is little risk of any two being exactly alike.

Having a large stock of splendid bulbs, we are able to offer them at a very reasonable price, viz. 60 cts. per doz., \$4.00 per 100, \$35.00 per 1000. If wanted by Parcel Post add 6 cts. per doz. for postage.

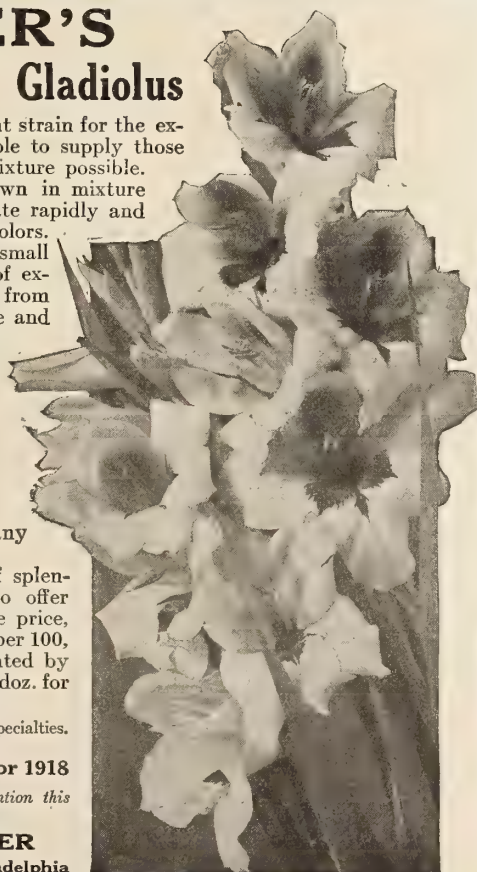
The above is but one of our Specialties. For complete list send for

Dreer's Garden Book for 1918

Free on application if you mention this magazine

HENRY A. DREER

714-716 Chestnut Street, Philadelphia



NITRO-FERTILE

Send for this sample

For greener gardens and healthier plants

YOU cannot expect your flowers and shrubbery, your potted plants, your lawns or your vegetable garden to take more from the soil than you put into the soil. You must feed the soil if the soil is to feed the plant.

NITRO-FERTILE is planned to make your task of feeding the soil easy, simple and pleasant. It is a liquid which you dilute with water and pour directly around the roots of the plants. Being a liquid it is so absolutely odorless that you can use it freely on your dining-room fernery.

We do not ask you to accept glowing claims about Nitro-Fertile. We prefer to invite you to

try a 10-day test

Nitro-Fertile is sold in all sized packages from ½ pints to gallons. For trial purposes we mail a 1-oz. sample sufficient to make one to two gallons or enough fertilizer for a 10-day test on your indoor plants or a small outdoor plot. Send 25c for this sample. Nitro-Fertile is more economically purchased through your dealer as the excess price covers careful packaging and mailing.

THE FERTILE CHEMICAL CO.

601 Ellaston Bldg.
Cleveland, Ohio

This Coupon makes it easy to write

Enclosed find 25c (stamps or coin) for 1-oz. sample of Nitro-Fertile.

Name

Address

Town or City

State

Grow Roses and Keep Fit

The bow that's always bent soon loses strength. The man or woman who works *always* at high pressure is soon spent. Somewhere, somehow, we all must accumulate strength, enthusiasm and a fresh outlook, else our most earnest efforts to serve our country will fall short. "Grow Roses and keep fit." That's Nature's own prescription. Begin at once with the wonderful new

Chinese "Hugonis" Rose

—a rare variety of great beauty. Its yard-long sprays of delicate bloom are of rich yellow. The foliage is dainty and attractive throughout the season. The young shoots of rich crimson lend an added charm. Yet this remarkable new beauty is as hardy as a daisy and a vigorous grower. We recommend it heartily for the lawn or for planting among shrubbery. Own-root pot plants; 2 year size, \$1.50 each, postpaid. Larger 2 year plants, by express, \$2; 3 year, by express, \$5.

Every reader of the Garden Magazine should plant at least one "Hugonis" Rose this Spring. And we have enough to go around—if you order promptly.

Be sure to ask for our 84-page
1918 Floral Guide—FREE

The **CONARD** ★ **WEST GROVE**
& Jones Co. Box 24 PA.
Robert Pyle, Pres. A. Wintzer, Vice-Pres.
Rose Specialists—Backed by 50 years' experience

"How To Grow Roses"

—an illustrated 32-page booklet which we will send with 25c return check good on first \$1 order and our 84-page 1918 Floral Guide. All for only 10c. Send to-day.

Handy Box of Plant Labels

Assortment complete from 3½ inch tag label, copper wired, to 10 inch garden label, 300 in all, with marking pencil; packed in a neat strong box for mailing. Needed in every garden. An appropriate present to a friend interested in gardening. Price \$1.20 postpaid. Beyond the fourth zone add fifteen cents.

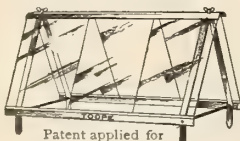
W. H. BAYLES, Verona, New Jersey

HANDSOME HARDY AMERICANS

arrive at the front as constantly in our gardens as they do in France. All gardening that is **rich, harmonious, permanent**—even through winters like this last—requires them in quantity. A mere barbaric blur of color in gaudy fleeting foreign stuff is not a garden. On early orders we offer discounts, that, popular as they are already, should help them to win many trenches. A card brings them.

HARDY EVERGREEN GARDENS, Route 1, Old Fort, N.C.

COLLAPSIBLE FORCING FRAME



Patent applied for

SOMETHING NEW UNDER THE SUN

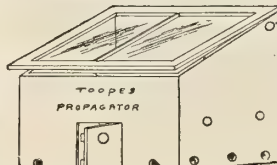
Garden hobbyists everywhere will be interested in two new devices designed to increase gardening results and joys

For Forcing Vegetables, etc., is a rigid frame, so braced that glass cannot be blown out, and is watertight. Price, \$1.50 each (without glass).

The Propagator is the greatest little "hothouse" ever invented. Heated by lamp. Great for forcing seeds and seedling plants. Prices from \$7.00 and upwards.

Write for descriptive circular of these novelties. Ask your nearest horticultural dealer for full prices. F. O. B. Boston.

The Horticultural Appliance Co., 143 Federal St., Boston, Mass.



Putting a Push Into the War Garden

Do You Want Early Vegetables?—I am anxious to get vegetables sufficiently large for eating by June—I mean vegetables such as carrots and beets, and perhaps dwarf peas and beans (lettuces and radishes present comparatively no difficulty). The usual time for sowing vegetable seeds here in the open is about the third week in April. Could I grow them in hotbeds and if so, what depth of earth is required? Stable manure is easy to procure. Or perhaps some readers could give me his experience of "forcers" or "cloches." But I am afraid the ground here would be too cold for the seeds to germinate under either of the latter methods. The reason why I want early vegetables is that I am away from home in July and August.—J. H. Woodcock, Canada.

[—By selecting extra early or forcing strains of first early types of vegetables, it should not prove difficult to enjoy carrots, beets, dwarf peas and beans during June. Both French Forcing and Chantenay Carrot will reach edible size by middle of June from seeds sown middle of April. Carrots are not transplanted easily, but cloches will help until the seedlings are fairly well started. Beets may be started in hotbeds and are easily transplanted. A foot of manure covered by 5 inches of finely sifted soil makes a hotbed. Beet seeds may be sown outdoors as soon as ground can be dug. Either Eclipse, Crosby's Egyptian or Detroit Dark Red will reach the 2½ inch size within 60 days. Smooth-seeded peas of the dwarf type, such as Alaska, Pedigree Extra Early and Prolific Extra Early will bear pods within 55 days after sowing and may be planted almost as soon as snow and frost leave the ground. By pressing into service dirt bands or paper pods, Bountiful Beans may be gathered by middle of June from seeds sown early in April.—Ed.]

Does Anybody Know?—Can the potato yield be increased by the subtle method of fooling the potato plant into developing later small tubers through robbing it of the earlier ones as soon as they attain full size? It would look like a sound proposition at first flush, because the potato makes its tubers in order to "carry on." The natural process being interrupted, and being robbed of the fruit (or tuber) of its provision, it proceeds to bridge the gap by further activity. This is how it works out with Sweet Peas, Pansies, etc.—the more you pick the more you have. On the other hand, of course, it may be argued that the Sweet Pea and the Pansy are not parallel because they are going to seed, whereas the tuber production is something quite apart from going to seed, and it may not work the same way. I asked Mr. Gilbert, who wrote—"The Potato" book, what he thought, and he sees it differently and speaks of heredity in this way:

"I do not believe that 'succession harvesting,' that is, by removing as early as possible one or two developed tubers, will help permanently in any way to increase the yield of potatoes. It may induce the plant at that time to produce more tubers, but you can readily understand that this has no effect on the germ cells of the plant and therefore it does not enter into heredity. The most satisfactory method of increasing yields at the present time is to practice the so-called 'hill selection.' This is choosing seed from hills that have given the largest percentage of merchantable tubers. This can be as

(Continued on page 106.)

FREE—Write to-day for new catalogue entitled

The World's Best Dahlias



Accurately describing all the best new and standard varieties in Cactus, Decorative, Giant Flowering, Show, Fancy, Pompon, Pæony, Duplex, Collarette, Anemone, Century, and Single. Natural color reproductions of new Decoratives, "Dr. Tyrrell" and "Minnie Burtle" and 38 beautiful half-tone illustrations of the distinct types. The leading Dahlia catalogue with the 1918 novelties.

PEACOCK DAHLIA FARMS

Berlin, New Jersey



The Home of Elm Hill Gladioli



has long been famous for exceptional offerings in rare strains of beautiful gladioli. It now offers a great

New Giant Race of Prizewinners

Evelyn Kirtland. Rosy pink fading to shell pink. (Note young lady measuring flower spike with yardstick).

Gretchen Zang. Color Beaute Poitevine Geranium.

Herada. Unusual glistening mauve.

Wamba. Enormous salmon.

Bertrex. Best white, extra fine.

This Collection has won 10 prizes at leading expositions.

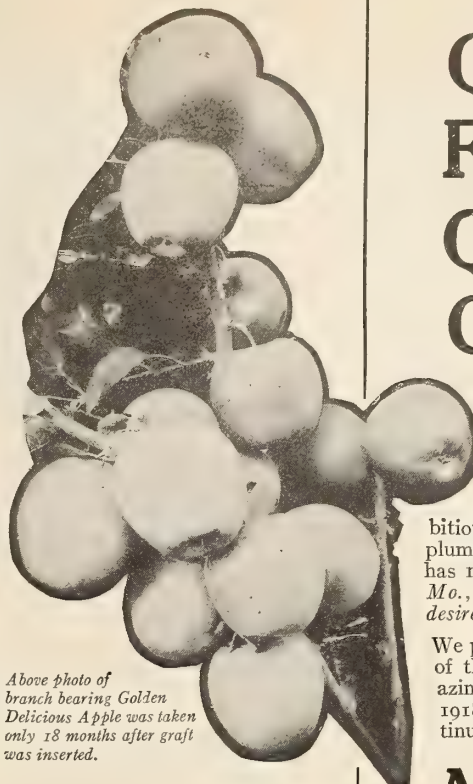
5 Superb Kinds
1 Bulb of Each Variety \$1.00

3 fine bulbs of each kind (15 in all) for only \$2.75 postpaid. This is the most reasonable price that can possibly be made for *The Best in Gladioli*.

Write for Descriptive Booklet

Offering all of our unusual creations. Gladly mailed free—write us now!

AUSTIN-COLEMAN CO., Wayland, Ohio



Above photo of branch bearing Golden Delicious Apple was taken only 18 months after graft was inserted.

Quality Fruits—Quantity Crops

Quality ideals cherished for over 102 years have made the name Stark Trees synonymous with super-quality fruit and great yields.

For generations the man ambitious to raise finest apples, peaches, plums, pears, cherries, berries, etc., has naturally looked to *Louisiana, Mo.*, for the trees sure to gratify his desires.

We possess the fruit tree patronage of the majority of the Garden Magazine readers. We value it. Our 1918 stock is worthy of their continued confidence.

New Apple GOLDEN DELICIOUS

Queen of yellow apples. Greatest fruit development since Stark Delicious—master of all red apples, was given to fruit lovers by Stark Bro's Nurseries.

Fruit lovers have longed for a yellow apple combining delicious flavor, great size and young bearing, late keeping and hardy tree characteristics. "Golden Delicious" is the answer. We

have tested it for several years—and know. The branch shown at left is a "top graft" inserted 18 months before photo was taken. In 18 months that graft bore this fine crop of extra large golden fruit! Nothing equal is recorded in all our 102 years of horticultural history!

Learn more about it and all Stark Bro's Improved Varieties of Fruits.

Buy Flowering Shrubs This Year

Our stock of Shade Trees, Flowering Shrubs, Roses, Plants and Hedges is of specially fine quality. Our prices are reasonable. But—next year the prices must advance. Labor is high.

Every item entering into production has gone up in cost. New stock now growing for next season will demand much higher prices. So—decide now to take advantage of our present low prices. Write for details of FREE Landscape Plans and for Portfolio of Landscape Views

Stark Bro's
at
LOUISIANA, MO.

Use the coupon to write for our FREE 1918 publications: "Best Fruits," "Fruit Profits," and "Ten Reasons." We will give you our Special 1918 Price Offers and our Freight Prepaid Offer.

Use the Coupon

Stark Bro's Nurseries
Box 122, Louisiana, Mo.



STARK BRO'S NURSERIES, Box 122 Louisiana, Mo.

Send me at once your 3 Free Publications advertised in Garden Magazine.

I am interested in planting () Fruit Trees.

I am interested in planting () Ornamental Shrubs, etc.

Send me () FREE Landscape Plans.

Name.....

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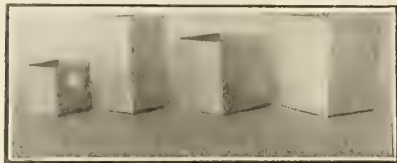
City.....

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Don't Waste One Seed!

Patriotic gardeners, this year, will practice wise seed economy. While the supply is ample, it behooves us to conserve it. You can help along in this important matter, if you

Let These Paper Pots Help



2x2 4x2 3x3 4x3

Start your indoor garden with them this month. Use them to sow Peppers, Tomatoes, Egg Plants, etc. Make every seed produce a plant.

	per 100	per 1000
2x2 size—for all small Plants.....	\$.75	\$5.00
4x2 size—for Sweet Peas only.....	1.00	6.00
3x3 size—for Tomatoes, Melons, Cucumbers, etc.....	1.25	6.50
4x3 size—for Corn, Beans, etc.....	1.50	7.00

No increase in prices while present stocks last.



Stands for earlier and larger crops of better vegetables and flowers. Patented wires and any size glass do the work. Different kinds for various purposes.

Single Wire Forcers



as shown alongside, are assembled by simply inserting the glass in the side loops. Any size of glass can be used.

Sample on receipt of 15c

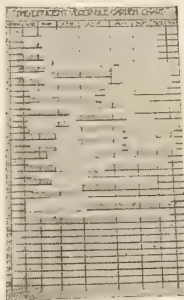
Wires only, per dozen.....	\$ 1.50
Wires only, per 100.....	11.50

The Efficiency Garden Chart

doubles garden yields

Enables the gardener to visualize his garden months ahead. It consists of a grooved board into which fit printed cards representing different vegetables. Its use makes possible a highly intensive cultivation that stands for bigger crops.

Price 75c Postpaid



Special Offer of Unusual Flower Seeds

Chinese Woolflower—a very showy rose-crimson bedding plant that blooms all summer. Pkt. 25c.

Delphinium—An English strain of remarkable hybrids, gathered from the finest collection extant. Pkt. 25c.

Pansies—Hunt's Superb Mixture of All Giant Flowering Kinds of superb form, and in a great variety of attractive colors. Pkt. 25c.

Special Offer:—We will mail one packet of each of above unusual floral creations for 50c postpaid. Catalogue of other seeds and booklet of unusual garden accessories free on request.

THE CLOCHE CO., C. H. Allender, Mgr.
37 Warren St. (Phone 5615 Barclay) New York City

(Concluded from page 104)

easily practised by the farmer or home gardener as can the scheme of 'succession harvesting' and I am sure will reach more satisfactory results."

All of which though probably quite true does not seem to me the point of issue, which is simply this: Can the present potato crop be increased by gathering the tubers as they attain size? Does this induce the plant to continue tuber production in the development of the smaller tubers?—L. B.

A Few Flowers for the War Garden.—In these days of war and war gardens, when we find it impossible to provide space for all the flowers we desire to grow in our gardens, it is difficult to decide just which we must have and which ones to eliminate. Beans and potatoes look good to me in their place, but with me there are a few old-fashioned flowers that look better when used to border a walk, or fill an otherwise blank space by the garden wall. A border of perennials I simply must have; my garden would be incomplete without it. Snapdragons, Larkspurs, Columbines, Foxgloves, Pansies, Campanulas, Violets, and Early Pinks, I put in this border. I have some young Hollyhock plants for a row at the back of the vegetable plot. Then, I expect to have a few feet in Sweet Peas, Margaret Atlee (cream pink), Wedgewood, King White, Fiery Cross, and a mixed package of Spencers, are the varieties I expect to plant. They will occupy but a little space in my garden, and will produce more fragrance and color than anything I could substitute. And Periwinkles I shall have, also. They are such profuse bloomers and they keep up their display so long I can't get along without a few beds about the lawn or a straight row or two in the vegetable plot. There are other flowers, perhaps, that you will consider superior to the ones mentioned, but remember a garden is a personal thing.—Buford Reid, Ark.

A Fine Bean for War Gardens.—I think the Garden Neighbors will enjoy reading about a little known Wax bean which last season proved a remarkable success in my



Hardy Wax, which one Western gardener has found a very satisfactory bean for yield

garden. It is called "Hardy Wax" and though it has Refugee blood in it, is of compact bush growth. The foliage is so leathery that it is never attacked by blight or mildew. Though our rich prairie soils encourage an immense leaf growth, in the case of the Hardy Wax bean this seems to affect the production of pods rather than foliage. Accompanying photograph shows a typical specimen bush. The beans are always stringless and the plants bear practically all season if the pods are picked regularly. This should prove a fine home bean in war gardens of Garden Neighbors anywhere.—Don S. Blair, Aurora, Ill.

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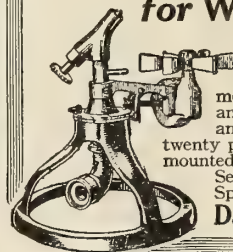


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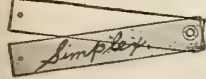
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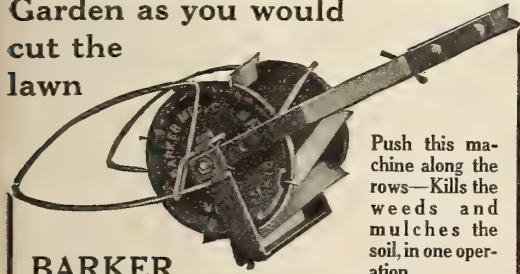
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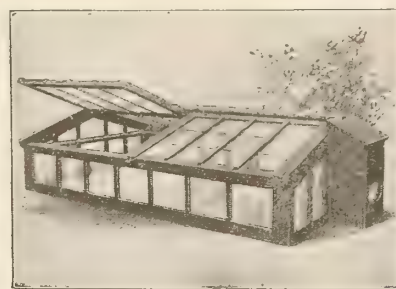


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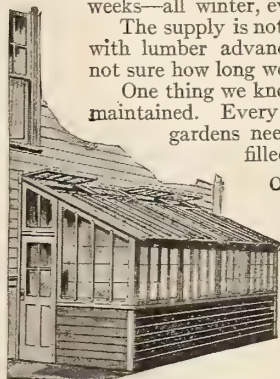
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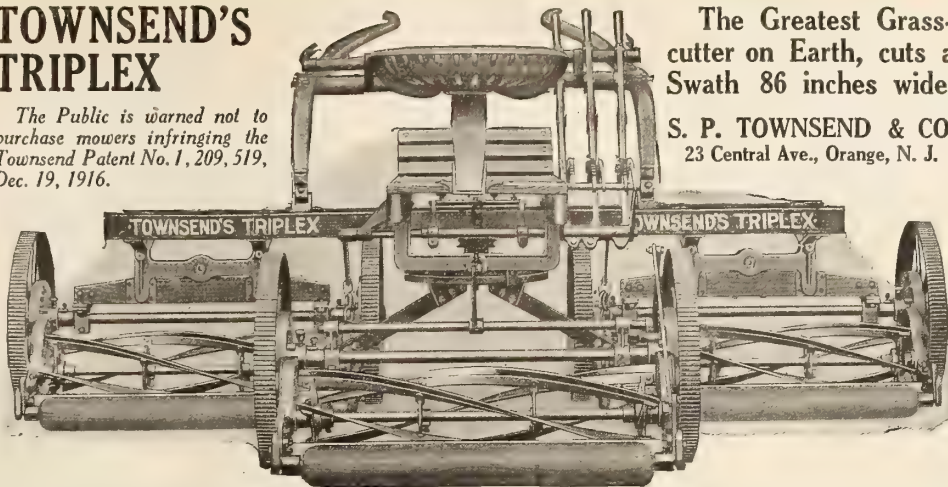
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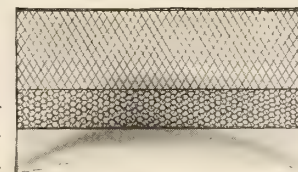
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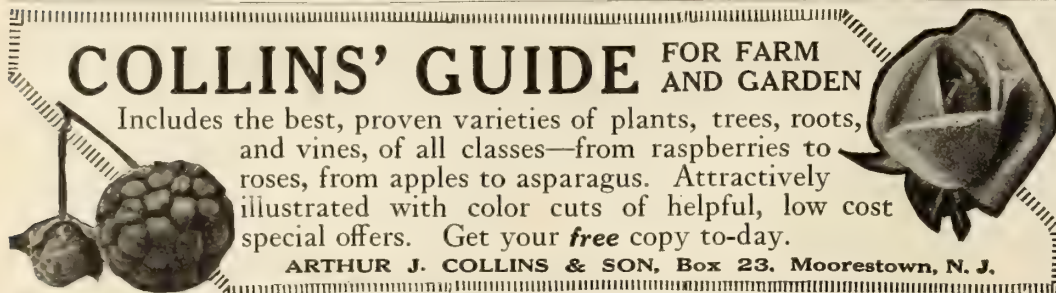
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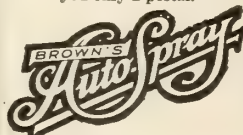
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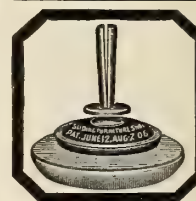
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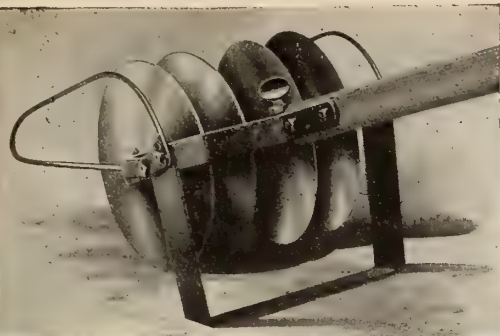
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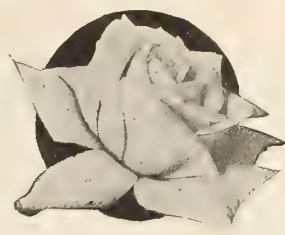
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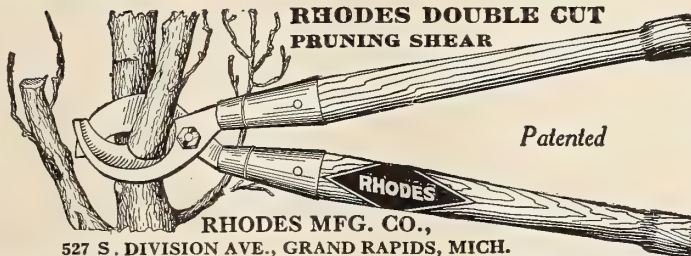
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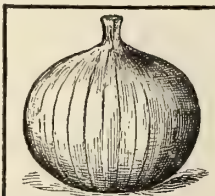
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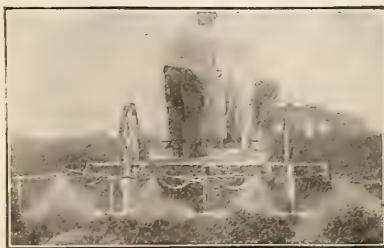
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Spring Planting Manual

GARDEN

APRIL
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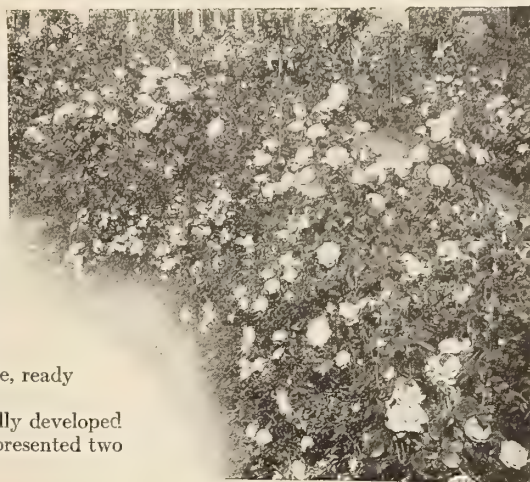
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G. & R. Own-Root Roses are propagated at that time of the year when the rose plants make their natural growth—spring and summer. This puts the growing impulse into the G. & R. Roses which they display under all conditions. G. & R. Roses are not "forced" to make a big growth by excessive watering or by the use of artificial fertilizer. They get good soil, an abundance of air and sunshine, and, when Fall comes, are set to rest in a semi-dormant condition, in which they remain all winter. This conserves the bent-up energy in each plant. When G. & R. Roses reach you the following Spring, they are fairly "bubbling over" with stored vitality.

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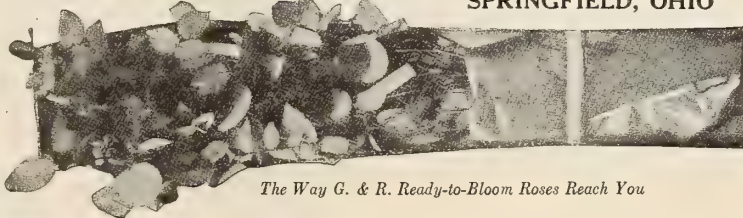
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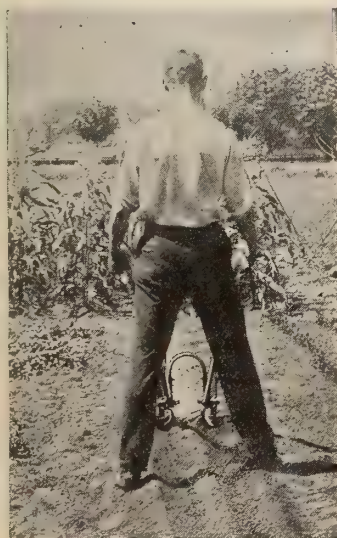


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We have called it "The War-Time Flower Garden." It lists nothing that is not well worth growing: all undesirables have been discarded. Yet it covers everything in Seeds, Plants, and Bulbs, that is essential to the perfect garden. Shall we mail you a copy?

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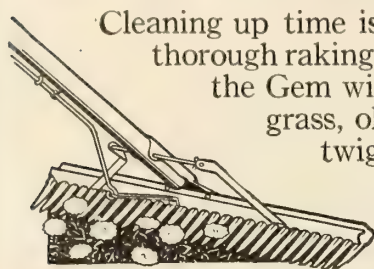
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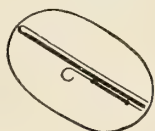
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1000 Hector, yellow and velvety red	.10
Our selection, unnamed	per 10 .75

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We offer this season over sixty kinds and colors, all "Made in America" and of the highest quality.

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can furnish everything required for planting in this latitude *** everything in the ordinary and many things not found in the ordinary nursery; for example:

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Shrubs, Shade Trees, Vines,
Fruits, etc., etc.**

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Pot-Grown Perennials

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THE GARDEN MAGAZINE

APRIL, 1918

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J. P. Verrees

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LEONARD BARRON, EDITOR

Published Monthly, 25c. a copy. Subscription, Two Dollars a Year.

For Canada, \$2.35; Foreign Countries, \$2.65.

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GARDEN CITY, N. Y.

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Entered as second-class matter at Garden City, New York,
under the Act of Congress, March 3, 1879

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We Need Relaxation

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With a Little Tree Garden on Your Place "It is Always Planting Season" With You

How many times while walking about your estate have you thought "A little blue spruce would 'brighten up' this corner" or "A few shade trees right here would be just the place to swing a hammock this hot day," or "I wish that objectionable view on my neighbor's property was screened from sight," or "A mass planting of Japanese Barberry with its bright red berries would be cheerful in the fall and early winter," etc.? With a Little Tree Garden you can carry out these small plantings with your own stock when the spirit moves.

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5 Japanese Barberry.....	1 to 1 1/2 feet tall
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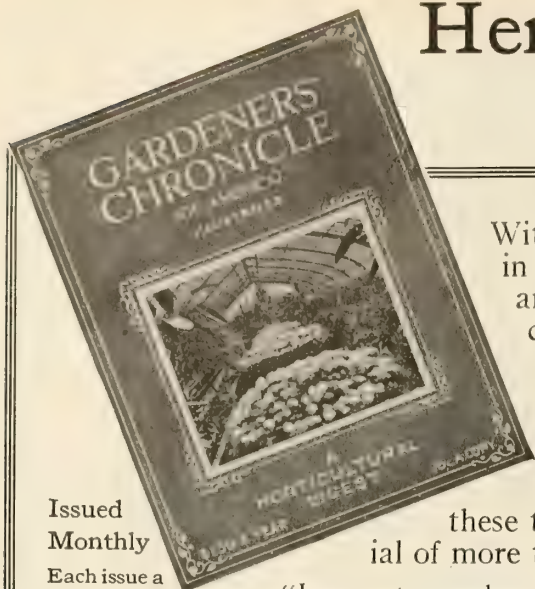
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Monthly
Each issue a
book in itself

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Its pages are devoted exclusively to gardening, covering all its phases at all seasons of the year. Its notes on the growing of flowers, fruits, and vegetables are both precise and practical. They do not leave the reader in doubt on methods of procedure.

The special articles, each month, are from the pens of the foremost gardeners and horticulturists in America.

Its digests are from the leading horticultural periodicals of both America

and European countries. The Gardeners' Chronicle provides a fund of helpful knowledge each month for all interested in gardening, and is creating among its readers a more informed knowledge—a real gardening spirit, by interpreting the true and lasting joys and benefits of gardening. It aims to perpetuate the nation-wide interest and activity that has been aroused by our government in American home gardens.

Such a publication will be of inestimable help and benefit to you in your garden work

You should read it each month. The already large and rapidly growing list of subscribers all over the United States is testimony to the appeal of its editorial policy.

We wish the readers of this magazine to become acquainted with it and so make the following special offer.

WE WILL MAIL THIS MAGAZINE TO YOU FOR THE NINE Remaining Months of 1918 FOR \$1.00 IF YOU MAIL THE COUPON NOW.

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← Coupon

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GARDENERS' CHRONICLE

286 Fifth Avenue

New York

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"I read your magazine from cover to cover. It is practical and the information contained is helpful to me."—MRS. E. F., NEWARK, N. J., 4-3-17.

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"I value your magazine as one of the BEST publications I receive on gardening."—W. J. B., ENGLEWOOD, N. J., 3-23-17.

"I am greatly interested in your magazine and would not be without it."—J. L. R., DENVER, COLO., 3-22-17.

"Enclosed find renewal. Be sure and send the October copy. I don't want to miss a single number."—L. N. B., NOKESVILLE, VA., 10-17-17.

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"Beautiful Home Surroundings"
now ready for distribution.

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Written from the viewpoint of the intending purchaser, who wishes to secure pertinent facts without wading through a mass of unnecessary technicalities, it stands forth as a monument of efficient description of the products of this nursery. No effort has been made to list *all* the plants and shrubs, trees and vines that are growing at Framingham.

Rather has the idea been carried out of presenting "in language easily understandable, accompanied by pictures that truly illustrate, descriptions of uses and adaptability conveniently arranged; all of which every gardener has need of in planning the home grounds."

Every reader of THE GARDEN MAGAZINE should have a copy of this book and use it in re-arranging his or her garden scheme and placing orders for their spring planting. To keep away mere curiosity seekers, a nominal price of 35c. per copy has been put on the book. The edition is limited. It has just come from the press. We want readers of GARDEN MAGAZINE to have this book because we know they represent the highest type of intelligent garden enthusiasts.

If you will write us and mention the fact that you read the GARDEN MAGAZINE, we will be glad to send you complimentary, one of the first copies from the press.

Address Framingham Nurseries, Framingham, Mass., and say: "Send me your new book 'Beautiful Home Surroundings,' I am a reader of GARDEN MAGAZINE."

The Garden Magazine

VOLUME XXVII

APRIL, 1918

NUMBER 3



AMONG OUR GARDEN NEIGHBORS

Seeds and the Man

SEED is scarce this year, but it will be scarcer next. This statement is made on the authority of experts who have carefully considered the prospects as they affect the whole world. Ordinarily the growing of seeds at home is not to be recommended, because much better seed can be produced by experienced plant breeders having large fields to work with. This year is an exception, and home garden makers are being urged to produce during the coming season a certain portion of the seed which they will need for the following year.

Professor W. T. Macoun, Horticulturist at Ottawa Experimental Farm says that by selecting two beets, two parsnips, two turnips, three celery plants, five onions, two cabbages, and two carrots for growing seed, more than enough for the average garden will be produced. These vegetables must be selected from those now in the cellar, the best specimens being chosen. The space required for beets, cabbages, carrots, parsnips, and turnips to develop in, is 2 x 3 feet, for celery 1 x 3 feet, and for onions 2 feet x 6 inches. One row of seed plants across the end of the twenty-five foot plot will take up little room, and will be sufficient to grow more than enough of the seed that will be required for at least these seven kinds of vegetables.

A single beet should produce from two and a half to five and a half ounces, or from fifteen hundred to nineteen hundred seeds. The beets should be planted in the ground so that the top will be slightly under the surface. When the flower stalks are thrown up it will be desirable to tie them loosely to a stake to keep them from being broken down. The seed will be ready to harvest when it begins to turn brown. If it is then cut and tied up for a few days, it will dry out sufficiently so that it can be easily threshed with a light stick.

A single head of cabbage will produce more than enough seed for the average garden, but it is necessary to plant two, as the flowers of one must be crossed with those of another in order to get well-filled seed pods. The crossing is done by bees or other insects. About one third of the head should go into

the ground, and it is well to make a slit with a knife crosswise over the top so that the seed stalks will have a better chance to push out. If the gardener has stored cabbages in the ground outdoors during the winter, they probably have the roots left on. Such heads are all the better for planting, as they are less likely to rot. Only the roots need go into

be cut off before the onions are planted out. Put the bulbs about six inches apart in the rows, and an inch or two below the surface. It's a good plan to bank up the plants a little as the tops grow, to give them support. Take off the seed balls when the seed stalks begin to turn yellow near the ground. Spread out the seed balls until they are dry, and thresh out the seed as quickly as possible.

If these directions are followed, it will be an easy matter to save an abundance of seed from these biennial plants. Of course it is a much simpler matter to save the seeds from the annuals like peas, beans, corn, squashes, and melons. Although this line of garden work is new to most amateurs, it is well worth the attention of all garden makers at the present time, as a real war measure.

We Americans, as a group, know all too little of the art (which in the old world is common knowledge) of seed raising. The individual can do much to help himself with the simpler things, thus leaving the technically trained professional seedsman more opportunity to devote his attention where it will be most beneficial.

Facing the Fruit Situation Squarely

IT IS high time that the home gardener gets away from his habitual indifference toward the planting of fruit trees. Fruit is food, but unlike other food, it is not and never can be produced with time-table precision. The average vegetable can be grown to edible size in so many days. Animals are turned into food after so many months of fattening. But before fruit trees bear they must attain age and come into bloom; the flowers and newly set fruit are subject to many attacks by frost, insects, and disease. If constant vigilance be not practised to counteract all these unfavorable influences, fruit of every kind may be a luxury.

In normal times, during normal seasons, the world at large produces enough fruit to give everybody a taste—at a price. We, in this land of plenty, have always had more than our share. Will it continue? It all depends on the attitude adopted by us toward fruit-tree planting this spring. Right now is the

The Food Administration says:

Use FRUITS, VEGETABLES, and POTATOES abundantly.

EXPLANATION—These foods are healthful and plentiful, and, at the same time, partly take the place of other foods which we must save. Raise all you can for home use.

The Government has no intention of ever taking an ounce of the home-made preserves or of the home-grown products kept in pantry or cellar.

Use local supplies; this saves railroad transportation.

Report to the nearest Food Administration officer the name and address of any person discouraging the production or saving of food.

the ground, the leaves resting on the surface. When the pods turn yellow, they should be dried and threshed out.

Carrots, parsnips, salsify, and turnips are to be handled in the same way as beets, although the seeds may not ripen so evenly. With carrots, in particular, it is necessary to make several pickings to get all the seed as it matures.

Three celery plants are chosen as a matter of precaution, as celery plants are likely to become diseased when planted out in the spring. Set the plants about the same depth as they stood in the fall and harvest the heads as soon as the earliest seed begins to drop. If all the seed is not ripe, the plants can be hung up to dry.

Onions sprout very easily, even in the cellar, as all housekeepers know. If such sprouts are found in the spring, they should

time to lay your plans, to arrange that you may be able to gather your *own* crops of fruit in time to come.

The wanton destruction of thousands of bearing orchards in Belgium, France, Italy and other countries within the war-zone adds to our obligations. We must provide the fruit these countries need, not only during this war, but until such time thereafter, as their newly planted or worked over orchards come into bearing. Both France and Italy exported lots of fruit in peaceful times; but that cannot be the case in the near future. The supply must come from new sources. Can we take care of every need thus arising?

Most assuredly; but we must act promptly. Each individual reader of this magazine should consider it a solemn, patriotic duty to plant as many fruit trees, plants and berry bearing shrubs this month as space permits. Bear in mind that many dwarf forms of fruit trees make possible the cultivation of the "orchard" fruits in even small space as is explained elsewhere in this issue.

This spring the supply of young fruit trees in this country is abundant. But it has taken years to work up this supply, with France furnishing most of the seedlings or seeds from which to grow the seedlings. That supply has definitely ceased. Another year may see a decided advance in the cost of fruit trees. Are you prepared, as an economy measure, to plant yours this spring—*now*?

Get Your Spraying Machine Now

SPRAY pump manufacturers report an unparalleled demand for spray pumps of all kinds. With the value of crops constantly rising and labor at a premium, America's horticulturists and agriculturists are not missing any bets in the way of crop insurance. That's what spraying really amounts to. Any one with even a *few* fruit trees, shrubs, or berry plants, tomato plants, or a potato or cabbage patch, should be prepared to give the insects and fungi the kind of reception that will settle them for good.

Order your spray pump and materials now! We shall tell you next month how to use them to best advantage, when to spray for the different pests, and what with.



"Everywhere in France" where the invader has been. This systematic destruction of the orchards will have its influence in the demands made on this country for food material and nursery stock

The Contrast—In the calm and quiet of the country, amid the beauty and color of the garden, in shady noods and woody glens, there is the air of peace in its most attractive appeal. Think of the contrast! Abroad, in France, under a rain of shot and shell, amid clouds of poisonous gas, in furrows stained with blood and filled with mud, the pride of our youth is fighting to hold back the most dangerous foe to freedom that ever menaced mankind in civilized times. This fact alone is compelling enough to make everybody feel that conscience, more than duty, dictates most earnest support of the campaign for the sale of the Third Liberty Loan Bonds.

Reference Indices.—The "Readers' Guide to Periodical Literature for 1917" (The H. W. Wilson Co.), just issued, spreads before the surveyor a remarkable bird's eye view of the year's doings and sayings reflecting the trend of public thought as shown by articles in the leading periodicals of the year (including THE GARDEN MAGAZINE). "Canning and preserving" occupies four times as much space as in 1916—"Cost of living" has swelled to twice its former size. The European war naturally overshadows all other topics! Here are thirty pages of references to every phase of this vast subject—more than 2,000 entries, under 128 subheadings. "Food Conservation," "Bread" and "Coal"—once lightly regarded as commodities—reflect here their newly acquired importance. The Guide is in public libraries everywhere. The same publishers also issue the "Agricultural Index" During the year this Index will be issued ten times and cumulatively each quarter. Articles will be indexed from seventy-eight publications (including THE GARDEN MAGAZINE) in the United States and ten foreign countries. In addition, there will be references to material issued occasionally from numerous unrelated sources.

A New Bellflower for the North.—A new Bellflower named Marian Gehring, after the wife of Dr. J. G. Gehring, of Maine, in whose garden it originated, gives promise of becoming an excellent perennial for northern gardens. It is the result of an accidental cross between *Campanula punctata*, and the dark



New hardy Bellflower (*Campanula Marian Gehring*) supposed spontaneous hybrid in a Maine garden

blue, single-flowered *Campanula Medium*. The new plant appeared in Dr. Gehring's rock garden. To quote Dr. Gehring:

"About the first of July I found this plant standing finely erect, with the foliage of *punctata*, the general habits of the Canterbury Bell, and large numbers of lavender buds. Soon the buds began to open, and the new flower stood before me an established fact. To me, indeed, it seemed a miracle. Doubtless the bees took the pollen from *punctata* and crossed it upon the Canterbury Bell. The former being white, and the latter dark blue, I got a fifty-fifty cross, an even split into halves of the color pigment. Although the plant is erect, it is not stiff. It grows from two to two and a half feet high. Propagation is easy because many stolon-like runners are produced, each with bunches of young plants here and there. The plants obtained from these underground runners nearly always live and blossom the second year. Separating a plant that has flowered the preceding year does not seem satisfactory. No plant is easier to care for, but it requires deep, rich soil."

This new *Campanula* has proved absolutely hardy in Maine and also in Vermont. In these northern locations it begins to flower about the last of June, and will bloom well into August if the old blossoms are kept picked off. The freest blooming period, however, is early in July. The flowers last well when cut. Indeed, some of them bloomed in water last season for nearly three weeks, every immature bud coming to maturity. The flowers are reddish lavender, and about the same length as those of the Canterbury Bell; the teeth are more pointed, however, and the bell is more slender.

Apparently the only bad habit which the new plant has is that of decaying in spots during the summer, when the weather is warm and muggy. This is especially likely to follow close planting, but the blemish is shared with the Canterbury Bell itself. Seeds have never been produced. The best results

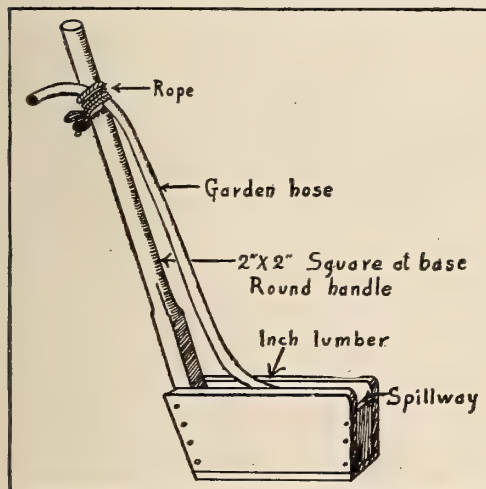
are obtained by planting new clumps annually, securing them by cutting off the stolons of the old plants. The Doctor himself says: "The discovery of this new plant has given me more pleasure than many a legitimate professional triumph."—*E. I. Farrington.*

Swiss Chard, The Handy Vegetable.—How many people know intimately the succulent Swiss chard—so easy to grow, so easy to cook, so easy to can? No vegetable gives more bountiful returns for small labor or offers a greater variety of uses as witness this chart:

PART	USE	SUMMER	WINTER
	Leaves Greens	Young leaves, cook as spinach	Cold Pack
Ribs	a. Greens	Cut in small pieces cook as spinach	" "
	b. Hot Vegetable		
	1. With cream sauce	Largest ribs, cut in small pieces. Cook as celery	" "
	2. With butter sauce		
	c. Salad	Cut in 5 inch pieces. Boil 12-15 minutes. Chill before serving	" "
	1. French Dressing		
	2. Mayonnaise		

A row 20 ft. long, planted at the same time as the first wrinkled peas, will give abundant supply for a family of five for the whole season if only the outer ribs are cut each time and the remainder of the plant left to grow.—*A. H. Macfarlane, Duluth, Minn.*

A Watering Device.—To prevent the dirt from being washed away from the roots in watering plants with a garden hose, a watering box as it might be called was made. As the drawing shows, the hose empties into



the box from whence the water flows on to the soil. The box should not be made too small or there may not be enough water to check the force of the flow as it comes from the hose. Several advantages are gained from using this device. For one thing the water is placed where needed without washing any dirt away. Then the hose is kept out of the mud and the box can be moved readily enough without soiling one's clothes. Weighted down with a stone it can be left standing anywhere.—*C. L. Meller, Fargo, N. D.*

Contrast in Planting.—If you wish to be patriotic and "show your colors"—also feast your own and your neighbors' eyes on a dream of beauty—plant several Crimson Ramblers rather close together on a trellis or pergola. In front of these plant Delphiniums, massing them closely together. For this, you want either or both, dark blue and the

true Belladonna—no light colors. In front of these, a row or clumps of Madonna Lilies, edged in front with Sweet Alyssum. As all three or four of these bloom at the same time (if the Alyssum is planted early enough or self sown) perhaps you can imagine their beauty. Of course, you must plan for this the year before; in fact several years—unless you already have the Ramblers. Tulips, Hyacinths, Narcissus and Crocus can each or all be planted in between the Delphiniums and Lilies and under the Alyssum. The Delphiniums if cut back as soon as faded, and some fertilizer applied will bloom again—sometimes three or even four times. It depends largely on the season. After the Lilies are cut down, seedlings of Phlox, Pansies, or even Asters can be set in carefully, so it will be beautiful all summer.—*Mrs. E. B. Murray, Ballston Lake, N. Y.*

Insects Defertilize Flowers.—A note of curious interest, on observing a certain fly (Syrphidie) gathering pollen for food, is read in *The Gardeners' Chronicle*, London, for January 5. The note tells of observing the fly gathering pollen not only of the stamens but from the stigmas of Pelargonium. "Whilst I was watching the fly eating the pollen from the anthers I noticed that the stigmas were well dusted with pollen. The fly also perceived that they were pollinated, for as soon as it had finished with the anthers and cleansed its feet of pollen, it turned its attention to the stigmas and very soon had picked off every grain of pollen from their surface, thus depollinating the flower and destroying its chance of being fertilized."

Flower Gardens in Alaska.—Flower gardening is a thing not usually connected with the popular conception of our great northern territory, Alaska. Summer tourists, however, find many attractive gardens in every Alaskan town of any size. Even those who have discarded the erroneous notions about its climate are surprised at the number and variety of flowers which can be grown there. The average observer, who has never read a garden catalogue, would notice little difference between an Alaskan flower garden and one in the "States," as they call us. Tests at the Sitka Agricultural Experiment Station have shown that 25 perennials and 40 annuals are perfectly successful. Among the perennials may be noted Columbines, Campanulas, Daffodils, Daisies, Day Lilies, Foxgloves, Gypsophila, Larkspur, Phlox, Iceland and Oriental Poppies, Sweet Williams and some kinds of Roses; among the annuals, Asters, Candytuft, Dahlias, Kochias, Marigolds, Mallows, Petunias, Pansies, Poppies, Snapdragon, Sweet Alyssum and Sweet Peas. The Sweet Pea and Pansy are very popular in Alaska and are no less successful there than in more southern regions. Tourists claim that Alaskan Pansies exceed all others in size. The season is necessarily short in a country so far north, but while it lasts growth of all kinds is remarkably rapid and luxuriant. This is attributable to the continual rains and the long duration of daylight.—*Leicester Bradner, Conn.*

White Grubs Coming in 1918.—Large flights of May beetles, well known as the parents of the white grubs, destructive cereal and forage insects, occurred in June, 1917, throughout Illinois, Wisconsin, Michigan, Ohio, Pennsylvania, New York, New Jersey,



The life of cut flowers can be lengthened by covering them with a shade glass, the cut ends being thrust in damp soil

and parts of other states. These flights mean, says a report of the Bureau of Entomology, United States Department of Agriculture, that throughout the area affected the white grubs will be destructively abundant in 1918, which will be the second year in the life of the resultant progeny.

Keeping Cut Flowers for Weeks.—Now and again, for some special purpose, it is desirable to keep cut blooms. I have found the following plan to be surprisingly good. Spread a layer of damp sand about an inch deep on to some flat surface like a board. Into the sand push the stalks of the flowers. Then cover with a glass shade as shown in the picture. Remove the whole thing to a cool place where there is not a strong light. Flowers will keep in perfect condition for several weeks, some kinds for as long as two months. The only thing needful is to lift up the glass shade now and again and clear away any signs of mould that occasionally appear.—*S. Leonard Bastin, England.*



Flowers in an Alaska garden. Because the season is short there is a great wealth of bloom at one time

Can't Grow Brussels Sprouts?—Though I am an experienced backyard gardener and have had very successful products for years, among them (in another state), brussels sprouts, yet here in Missouri, for two years, results are as follows: Last spring I planted a few stalks (for early use) in the same rows as cabbage. Cabbage Salzer's Lightning did splendidly, as it always does. The sprouts grew and in due time began setting the buds. As in former years, I trimmed off the stem leaves from some and left them on on others. The long stems were covered with "roses" but not one would stay shut and grow solid. All were like full blown

is aggravating. What think you of the thing?—*J. I. Billman, Kansas City, Mo.*
—Even under the best of conditions brussels sprouts are not easy to grow; that is, if you want real sprouts. And in dry sections of the interior it is practically impossible to get them up to standard. We are sorry for you, but feel that your remedy is not changing seedsmen or varieties, but changing your climate, if that could be done!—*Ed.*

The Yellow Wood Tree.—An unusually handsome tree that but few gardens possess is the Yellow Wood (*Cladrastis tinctoria* or *Virgilia lutea*). Why it is not seen more in choice col-

I tried it at Egandale but the position was too shaded and it failed. Mr. William Falconer (in *Gardening*) mentioned one at Dosoris, Long Island, as doing well and states that "it stands on somewhat dry ground and no tree in the garden has grown more satisfactorily." The Yellow Wood, which is native to Kentucky and Tennessee, where it is sparingly found, has the reputation of having extremely brittle branches, but the tree illustrated does not show such a defect. It was, however, kept well cut back when young, in order to induce the growth of many slender branches instead of fewer large ones. When old enough it commences to flower every other year, and annually at seventy-five years. From it is extracted a clear yellow dye.—*W. C. Egan, Illinois.*



The Yellow Wood Tree is indeed a handsome native and when laden with its white flowers in racemes seems like a white Laburnum

Roses and hence not good to eat. In July I planted some more plants for fall use. These were in rows with Volga cabbage which did exceptionally well, and I have some heads of it now. The sprouts grew as usual but again nothing except very loose bunches of small leaves and no edible product. I have used four varieties of seeds, from Wisconsin, Pennsylvania, and New York, hoping to secure good results. Last fall, I tried seed from a local house in the city, but the same disappointment. They simply will not grow into the little heads they should but remain fully open, even from the time they are tiny growths. I like the sprouts and wonder if you can suggest the remedy. This behavior

lections I do not understand for it is easily transplanted, and reasonably hardy. The one illustrated—some thirty feet high—has stood, to my knowledge, for more than twenty years on the brink of a high knoll where the bleak winter winds have full sway. It flowers in drooping panicles ten to twenty inches long, bearing white, pea-shaped, very fragrant blossoms, which not only lend themselves splendidly to artistic decorations, but, when cut retain their freshness for a long time. The secret for its hardiness in the position just mentioned lies in its being planted on a high, gravelly soil, where the drainage is perfect, and it has plenty of sun, inducing its wood to ripen well before the winter sets in.

Score Card for Garden Plants.—I submit a garden score card that may prove of interest to other readers. I can never resist the lure of new introductions and with my small garden I have found that elimination of many varieties is most necessary. The score card is but an attempt at a systematic basis for throwing out the poorer things. It is, or rather was originally, used solely for judging Bearded Iris, but slowly I am finding it a safe guide for selecting any of the garden occupants. I trust it may prove of some help, and I do wish that it might arouse some of the recrimination that makes the correspondence in the English papers so illuminating. The growing plant, in flower, and its value to the garden picture is the point in question, but it must be remembered that, as yet, Iris of all colors are not equal in height or size. Alcazar, pallida dalmatica, and Iris King, for instance, are equally fine but quite different in these qualities. Each should be compared with others that we know of similar coloring or what not, and credit should be given only for superior development. Full credit, partial credit, or even a deduction is reasonable and 20% for Unusual Qualities permits you to favor your favorites.

PLANT: 20%.	
Growth, exceedingly strong and vigorous	10%
Mass effect, if good in the garden	10%
STALK: 15%	
Well balanced	
The flowers pleasantly proportioned in size and shape to the height and habit of branching. This is necessary for the best effect of a well-established plant.	
Height	10%
Pallida, plicata, etc., 3 ft. or over.	
Variegata, amoena, interregna, or germanica, 27 in. or over.	
FLOWER: 35 %.	
Color	15%
Clear, or evenly flushed or blended. Venation and reticulation, if noticeable, cleanly defined.	
Shape	5%
Well defined: pallida dalmatica, Mrs. Alan Gray, Caterina, Monsignor, or Isoline are all distinctive in shape.	
Size	10%
Substance	5%
UNUSUAL QUALITIES. 20%	
General all round excellence, full 20%.	
Unique form of coloring, 10%.	
Pleasing scent, 5%.	
Foliage good throughout the season, 5%.	
Markedly fine development in any of the above points, an additional 5%.	
Value for exhibition, or as a cut flower, 10%.	
TOTAL	100%

I append my judgment of a few of the named varieties and wish that all varieties not 70% worthwhile might be discarded. Would that catalogues used a standardized score card and we might avoid many garden disappointments. Iris King, Alcazar, pallida dalmatica (true) 95%; Juniata, Ivorine, 80%; Isoline, 75%; Windham 70%; Caterina, 65%; Gracchus, 50%; Trantlieb, Wyomissing, 40%; and the much vaunted Black Knight, 30%.—*R. S. Sturtevant, Mass.*

THE MONTH'S REMINDER, APRIL, 1918

The purpose of the Reminder is to call to your attention the things which should be thought about or done during the next few weeks. For full details as to how to do the different things suggested, see the current or back issues of THE GARDEN MAGAZINE. (An index of contents is prepared for each completed volume, and is sent gratis on request. The READERS' SERVICE DEPARTMENT will also cite references on any special topic if asked—that's its job.) To get the full benefit of this, check off with a pencil, in the square provided for that purpose before each paragraph, the items that apply to your own case, and use the page as a reference list.

OVER THE TOP" with rake and hoe to roll up the greatest production of food in the small gardens of America that has ever been known! But—before leaving the winter trenches for "fighting in the open," give definite heed to these things:

1. Have you prepared your campaign and secured your supplies to every last detail? Check up every item; order seeds and fertilizers for succession and winter plantings; insecticides and other sundries.

2. Realize that this year you are not out to beat your neighbor in the gardening game, but to fight shoulder to shoulder against the menace of a common enemy—Starvation! Give all the help you can to any neighbor trying to do his "bit."

In the Vegetable Garden

THE very first step—if not done last month—is to ☐ get the manure upon the ground. The more manure the better; but if you can get only a limited amount, spread it over the whole garden instead of concentrating it upon one part.

☐ Plow or spade up your garden as early as possible—but don't touch it before it is ready. Wait till dry enough to crumble apart after being gently pressed in the hand, instead of remaining in a wet pasty lump.

☐ As soon as the ground is fit to work plant the hardest things—which will stand considerable frost; these include first plantings of carrots, beets, radish, lettuce, onions, smooth peas, swiss chard, spinach, turnips from seed; and cabbage and beet plants.

☐ Second planting consists of—parsnips, parsley, wrinkled peas, potatoes, salsify, from seed; and lettuce and cauliflower from plants.

☐ Set out vegetable roots as early as possible—no danger of getting them in too soon, i. e., asparagus, rhubarb, sea kale etc.

In the Flower Garden

FIRST of all; ☐ a general all-round clean up and scrub up! Leave no old tops and refuse to carry and spread disease.

☐ Fork up the soil as soon as sufficiently dried up about the roots; work in a generous application of bone meal and a very light dressing of nitrate of soda as the growth starts. Nitrification in the soil is very slow at this time of the year.

☐ The first thing to plant out of doors?—Sweet Peas! Of course. Get the named Spencer varieties.

As the ground gets fairly dried out and warmed up a bit, put in hardier varieties of flower seeds such as ☐ Asters, Candytuft, Carnations, Celosia, Centaurea, Marigold, Nasturtiums. These can be sown where they are to grow, but earlier and quicker results are had by making a special seed bed in a frame. Sow thinly, thin out early, and transplant to permanent place.

☐ Prepare all flower beds and borders as soon as possible.

☐ Remove the winter overcoat from the

fall-planted bulb garden; don't leave it on too long for the purpose of "protecting" the plants.

☐ As soon as the new growth of foliage starts, rake up the soil; this will destroy any starting weeds.

☐ Replant old clumps of perennials. With the exception of Peonies and a very few other hardy things, most hardy perennials are better if taken up and separated every three or four years.

In the Greenhouse

WITH the warmer weather, everything will begin to shoot ahead with leaps and bounds. The big problem indoors this month is to keep up with the work. Don't

those on solid benches) can be watered with an irrigation sprinkler or with a line of pipe fitted with greenhouse nozzles, cheaper than hand labor.

More and more air! The more ventilation you give now the less watering to do and the better the plants will be. Get "the air on" early in the morning; close up early in the afternoon, before the temperature begins to run down.

☐ Get all growing stuff out into the frames as rapidly as possible for hardening off.

☐ Plant melons, tomatoes, cucumbers, beans, radishes just as fast as there is room indoors. In planting, don't use fertilizer with too much nitrogen in it as there is probably already plenty in a readily available form in the soil. Depend upon the use of nitrate of soda as a top dressing to keep them growing rapidly enough. Fine ground bone and unleached wood ashes, added to a soil already rich with thoroughly decayed manure will give a "balanced ration"—or use a high grade complete fertilizer.

☐ Take late cuttings now. There's plenty of time to root up another batch including cuttings taken from seedlings that have been started from seed.

The Frames

HERE, as in the greenhouse, water, water, water! If you have more than two or three sash, rig up a pipe line with irrigation nozzles two feet or so apart.

☐ An important job with the cold-frames this month is the starting of the late or tender crops such as lima beans, melons, cucumbers, squash and so forth, in dirt bands or paper pots ready to set out in the garden as soon as the weather is warm enough. Each hill can be started in a five or six inch pot and set out complete.

Avoid overcrowding plants in frames; almost any kind of an old improvised frame will do for protecting plants now.

Shrubs

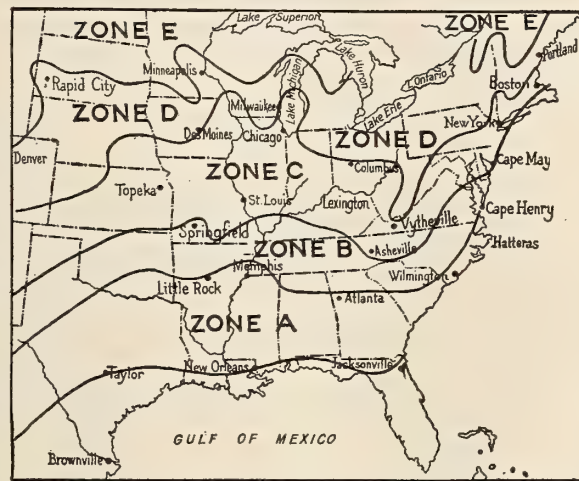
START off with the growth in a healthy condition. ☐ Examine for scale before leaves come out and give a dormant spray if necessary.

☐ Go over all shrubs. Take out dead and surplus wood. Those that bloom late in summer or in fall may be pruned now. Spring-blooming shrubs have their flowers already formed and if cut back now cannot flower.

Plant and transplant all you want before growth starts. Cut back the tops quite severely, and cut the roots off clean, instead of pulling and breaking them.

Walks, Roads, and Drives

☐ Just as soon as the mud has dried up and the sod has begun to get firm again, the edgers, scuffle hoes, and other tools for drives and walks should be put to use. Keep the edges of all walks and drives where they were originally. Mend ragged edges by inserting sod where necessary or by adding soil and seeding down.



MAP OF PLANTING ZONES: The first planting time for any crop varies according to location. The zones shown here indicate the general relationships of different parts of the country (as prepared by the Department of Agriculture). The dates given below are averages and will vary somewhat year by year. The common vegetables are considered in four groups as follows: **Group 1**—Smooth peas, onion sets, kale, early cabbage, potatoes, collards, and radishes. **Group 2**—Wrinkled peas, beets, carrots, parsnips, lettuce, salsify, and spinach. **Group 3**—String beans, tomato plants, sweet corn, and okra. **Group 4**—Peppers, eggplant, lima beans, cucumbers, melons, sweet potatoes, and squash.

PLANTING DATES. **Zone E:** Group 1 April 15 to May 1, except collards. Group 2, May 1 to May 15. Group 3, May 15 to June 1, except okra. Group 4, June 1 to June 15, except eggplant, melons, sweet potatoes.

Zone D: Group 1, April 1 to April 15. Group 2, April 15 to May 1. Group 3, May 1 to May 15. Group 4, May 15 to June 1.

Zone C: Group 1, March 15 to April 15. Group 2, April 1 to April 15. Group 3, April 15 to May 1. Group 4, May 1 to May 15.

Zone B: Group 1, March 1 to March 15. Group 2, March 15 to April 15, except salsify. Group 3, April 1 to April 15. Group 4, April 15 to April 30.

Zone A: Group 1, February 1 to March 1. Group 2, February 15 to March 15, except salsify. Group 3, March 1 to March 31. Group 4, March 15 to April 15.

think you "can put off 'til to-morrow what should be done to-day"—it will not be put off. Seedlings that need transplanting and plants that need repotting are "ready to-day and spoiled to-morrow."

Don't waste any surplus plants in the greenhouse this year if it is possible to keep them. Those you do not need will find a ready sale.

More and more water! Keeping growing plants in a sunny greenhouse sufficiently moist may seem like pouring water into a sieve; but it must be done. One day's neglect may see them wilted to the drooping point. Make a habit of watering late in the afternoon.

Keep your watering equipment up to date. Have plenty of hose and keep it all in good condition. Many things indoors (especially

Why Some Beginners' Gardens Don't Succeed

Absolute Necessity of Starting Properly—"Method" to Lighten Labor—Improving the Soil—"Laying Out" and Seeding

THE average beginner at gardening leads himself into failure, or at best only to a partial success, because he lacks the determination to start properly with soil preparation. The foundation of success lies in digging the ground just as deeply as time and physical strength will allow. *This is urgent in new gardens.*

Committees in charge of community gardens should heed this advice and see to proper preparation, it will save many plots from being abandoned in July and August when the crops are oftentimes burned up from drought.

GARDEN tillage is usually referred to in "spits" or spade depths. One spit is about 12 inches. Double digging is two spades deep, at the same time transferring the bottom spit to the top as you work. This should be done for new gardens and for all gardens where the subsoil is heavy and clayey.

Getting the Plant Food in Right

MANURES or fertilizers (except the very soluble ones) should be added during the digging. The customary way is to spread these evenly on the ground, digging them under as you work. Poor workers fail to cover the manure properly, which results later on in surface rooting of the crops. The best method of procedure is first to rough grade the ground and then spread the fertilizer. Now remove a trench about 1 foot wide and the depth you intend digging (not less than one spit). This excavated soil is wheeled to the opposite end of the garden to fill the void caused by the last trench. Now scrape the manure from the next spit to be dug and tramp it into the open trench, this assures its absolute covering and puts it down where it is likely to attract the roots out of the way of summer droughts.

Heavy soils that are largely clay and bake can be improved by the addition of ashes, or sand—even 20 per cent. if tomatoes or lettuce are to be planted—as these crops require an open, porous soil.

Digging Beats Plowing

PLOWING serves exactly the same purpose as digging, but in garden practice is not so thorough. In home gardens plowing is disappointing as often the ground is only tilled about 6 inches deep and the manure is only half covered.

The farmer harrows after plowing. This smooths and pulverizes the soil. We do the same thing with our gardens by going over the surface with a digging fork, breaking all lumps and at the same time rough grading which facilitates the raking which is the next operation. Always rake toward the low side of the garden, although very little soil should be "carried" on the rake. This practice will in time correct uneven grades. Use a wooden rake and never work the ground when it is wet.

Drill Making Made Easy

THE old hand is often much amused to see beginners make drills. Invest in a good garden line the length of your garden plot, put it on a couple of good stakes, old broom handles cut in two and sharpened are excellent. Then you can stretch the line taut. Using a line for a guide, "snap" it before starting, to assure straightness. Then start by placing one foot on the line, and sliding it along the line as the drill is made.

A hoe, or a plant label, or the handle of a

rake may be used to open the drill. Small seeds of the lettuce type require very shallow drills which are best made by using the point of a sharpened stick or a plant label; such seeds as onions and turnips are best sown in drills made with the edge of a hoe, the cutting edge being held against the line and the point at the proper depth, the hoe is then pulled toward you in short jerky motions; drills for larger seeds such as beans are made in the same manner but deeper; peas are sown in wide drills made by holding the side of the hoe against the line making the drill the width of the hoe. A spade may also be used for this purpose. Potato furrows are plowed or dug out; or on a small scale a hoe may be used in home gardens. Special drill-making garden tools are useful and are most desirable in gardens of any pretension.

It is a mistake to make drills deeper than necessary and then only partially filling them. It causes washing and the drill will oftentimes get partially filled while other garden work is being attended to with the result that the seedlings don't appear evenly. For good results the seeds in a row should be sown the proper depth below the surface, and the drill when filled should be the level of the adjoining earth.

Laying out the Rows

A MEASURING stick is indispensable in laying out the plot. Start at one side measuring from the boundary and placing a label where the first drill is to be located. Then measure on the other side, *don't trust to your eye*. Place the line on this drill, then with the measuring stick and the garden plan that has been made out in advance, lay out the other drills. Lay the package of seeds alongside the label where they are to be located and make all the drills for the day's work before any seed is sown. It is a common mistake of the unsystematic gardener to make a drill, seed, cover, firm, etc., and then move to the next drill.

Sowing Seed is an Art

ACTUAL experience is the greatest teacher in seed sowing. Reading will help, but the actual technique comes only with practice. The even distribution of a sufficient quantity of seed so that the row is full and regular with no blank spaces is an art. Thinning out is reduced to the minimum. Use enough seed to assure a good stand, but *don't be wasteful*. When seed is sown too thickly the plants are thin and spindly.

Large seeds, such as peas, are usually sown broadcast in a wide drill or trench. Take a handful, and, with a sweeping motion similar to bowling, scatter the seed in the drill. One handful will be sufficient for two full steps. Beans are sown by dropping the seeds from the hand at intervals of 3 to 4 inches; some gardeners sow in double drills which is simply a double row in a wide drill. Parsley, spinach, leek, swiss chard, onions, cauliflower, lettuce, parsnips, radishes, turnips, beets, carrots, cabbage, herbs, and similar seeds are sown by holding the seed packet in the closed hand and using the thumb and first two fingers of the hand to control the amount of seed dropped. Seed of this type can be sown as fast as a person can walk in the crouched position necessary when doing this work. It is important that the hand be kept close to the ground to prevent the wind blowing any seeds into adjoining drills.

In hill-planting such seeds as lima beans, corn, muskmelons, squash, pumpkins, cucumbers, etc., about twice as many seeds are dropped as the ultimate number of plants to be left. In most cases three plants to a hill is considered a crop, therefore six seeds should be planted. With the finger make a circle about 9 inches in diameter and the necessary depth, sowing in this drill, and when the plants have made their third leaf they can be thinned out to the required number. To prevent lima beans from decaying during wet spells make the drill about 4 inches deep and place about 2 inches of sand in the bottom. This by the way is always good practice on wet, soggy soils. Bush limas sown in drills can also be protected in this way. Corn is also more conveniently handled in home gardens when sown in drills, thinning out from 8 to 12 inches apart according to variety.

Always label each row after sowing, mark the date of sowing and later you can use the label for other data. To cover the seeds take a wooden rake back down and at an angle of 45 degrees with the row and just touching it. Large seeds such as corn, beans, peas, etc., can be covered with the feet, thus covering and firming at one operation. The seeds covered with the rake should be firmed by rolling with a light roller or by tamping with the wooden rake, holding it perfectly perpendicular. Do not use the hoe, or other flat-faced tool for this purpose as it packs the soil. Finish off the seed bed by raking over with a wooden rake, leaving the surface even and loose.

Successions or "All at once"?

LAYING a garden down" as some call it in spring, expecting the early intermediate and late varieties of the various vegetables to give an uninterrupted supply of produce until frost, won't work. Early beets mature only a few days in advance of later varieties; early peas come in barely before others are ready. In order to have vegetables at all times in prime condition, frequent sowings are necessary of beets, carrots, lettuce, broad-leaved spinach, corn, beans, kohlrabi, peas, cucumbers, radishes, endive, and turnip.

Vegetables that may be had for one seeding include: Lima beans, bush limas, brussels sprouts, swiss chard, eggplant, peppers, parsley, leek, onions, muskmelons, watermelons, tomatoes, parsnip, squash, pumpkin, okra, rutabaga, New Zealand spinach, kale, Jerusalem artichoke, potatoes, shell beans, cardoon, oyster plant, and globe artichokes.

Cabbage, cauliflower, and celery are sown in early spring for summer use and again in summer for fall and winter use. Early and late potatoes show more pronounced differences. The late potatoes are better keepers, therefore plant only just enough early potatoes to give the needed supply until the late varieties mature, planting all at one time. Each hill should yield almost a dozen tubers.

Look Out for Aphis

THE more hardy types of vegetable plants such as lettuce, cabbage, cauliflower, etc., oftentimes set out during April, are liable to be attacked by aphis or green fly. If the plants have been grown too warm or too crowded use a tobacco extract, or special aphis remedy as a "dip" before planting—spraying is difficult.



Watering newly planted large seed is often necessary on dry, well-drained soil. It helps settle the seed in contact and means early germination in warm weather



Be equally careful in transplanting seedlings for early crops. With the line as a guide use a trowel to open the earth and also to pack it around the roots again, as shown here



A good stand is helped by opening an even drill. It's quite simple—a child can do it by following this picture. Keep the garden line tight by one foot

The Garden Movies, No. 4

PLANTING TIME IN ACTION. A SHOWING OF WORKING DETAILS IN GETTING THE GARDEN STARTED PROPERLY. BEAR IN MIND THAT A GOOD FOUNDATION IS MORE THAN HALF THE BATTLE

Photographs by W. C. McCollom



For peas open a wide drill or shallow trench with a spade held flat



Fertilizer means good crops! Long-lasting, slow-working materials are best scattered on the surface and dug in; put quick-acting easily soluble fertilizers on the surface after growth has started. Light sandy soils are most in need of feeding up. But don't trust all to chemicals and ignore vegetable humus which holds moisture



Pieces of seed potato are placed singly by hand in a wide deep furrow



When planting berry bushes, shrubs, Roses, etc., make a hole amply large to let the roots spread naturally



Do you really want very early crops? Use protectors to shield the delicate seedlings against sudden changes



After planting slightly deeper than before, use your feet to make the soil compact and firm. Tramp hard!

One Hundred Per Cent. Success in Tree and Shrub Planting

The Case in General

Handling Newly Received Stock—M. G. Kains

SUCCESS in spring planting of nursery stock is simply a matter of attention to details, step by step.

1. Immediately upon receipt of the goods, unpack carefully and feel the packing material all around the bundle to make sure it is still moist. Remove the packing material and scrutinize the roots and tops of the plants to make sure they are not the least particle shriveled.

2. Either now or just before planting PRUNE OFF any ragged or mangled roots with a keen knife or a very sharp pruning shears. If the plants are to be heeled in for several weeks before planting, the pruning had best be done as soon as the trees are received.

3. IF STOCK IS PLUMP and in as good condition as when just dug, plant at once or heel in. Before doing this latter, loosen the bundle so the earth may be worked well among the roots. Heeling-in is simple. Dig a trench the depth of the spade blade in a moist spot preferably out of the wind and the sun. Lay the roots in the bottom with the tops lying almost flat on the ground. Shovel soil first on the roots and work it well among both roots and trunks. Tramp down, lightly at first, but when more soil is added do it firmly so no air spaces may be left. Finish by covering the trunks at least half way up to the tops.

4. SHRIVELED STOCK. If the nursery stock is the least shriveled either heel in or stand in a barrel full of water, or lay it in a pond or a stream, tops and all. Let it stay there for a day or two to plump-up. This will save even seriously dried stock. When ready to plant trees and shrubs, dig holes wide enough to receive the roots after any necessary pruning has been done and without having to bend these roots much, especially upward.

Digging the Hole. Feeding

IN DIGGING throw the "good earth" in a pile on one side of the hole and the lower earth or subsoil in another pile on the opposite side so the two may not become mixed. Now is the time to add fertilizers, especially long lasting ones such as coarse ground bone, basic slag, ground phosphate rock, and potash in any form. Scatter liberally in the hole and even work them into the bottom with a spading fork. Throw in a few shovelfuls of the "good earth" and if the fertilizing just mentioned has not been done, use fine bone meal, acid phosphate, tankage, dried blood or fish scrap, and mix well with the earth before placing the tree; otherwise certain of those fertilizers may "burn" the roots. Better not use animal or poultry manures in the tree holes as they may induce sappy growth.

How Deep?

PLACE the trees or shrubs so that when planting is finished they will be about an inch deeper than they stood in the nursery as indicated by the different color of the lower trunks or stems. Best have help when planting. It's easier for one person to hold the tree or shrub in position and do the

tramping while the other shovels, than for one person to do both.

Work the "good soil" intimately among the roots and press down hard with the hands. Throw on more earth and when the roots are covered, tramp down *thoroughly with both feet*, finishing by jumping up and down if the soil is sandy and you are light in weight. Use "good soil" until all the roots are covered; then finish off the top with the poor stuff. Leave the surface inch or two loose and mounded slightly around trees but hollowed somewhat around berry bushes until after good growth has been made.

Instead of tramping the soil so much, as indicated above, water may be used when it can be conveniently delivered as through a hose. In doing this, however, only half fill the holes with soil, then fill them with water. If the soil is loose or dry perhaps fill

back and thinning out shrubs are just as essential to success.

Special Problems Met in the Middle West

Alexander Lurie; Shaw (St. Louis) Botanic Garden

BECAUSE of the unusual drain upon the system of the plant during our hot summers, particular pains must be taken in spring planting, in the Middle West. It must be done just as early in the season as the condition of the soil will permit. This of course, applies only to hardy dormant material and not to pot plants grown in the green-houses or hotbeds, which though inherently of hardy nature, do not become such until well established outdoors.

The difference of opinion with regard to the most suitable time for planting often causes an unnecessary confusion in the minds of amateur gardeners. It has been found that with proper care in performing the operations of planting and subsequent painstaking attention, most plants, woody or herbaceous, may generally be moved satisfactorily either in the spring or fall. With us, however, this does not hold true. In general, fall planting is preferable for most of our trees, shrubs and herbaceous perennials with a few exceptions as Magnolias, Tulip-trees, Sweet Gums, American Holly, Bald Cypress, Roses, etc.

In localities where the transition from spring to summer is sudden and where extremely hot dry summers are the rule, the pruning of the top must be quite severe, often one-third to one-half the wood. Each shoot of a shrub should be shortened to an outward pointing bud, while in the case of

trees the lower branches should be removed, the remainder thinned out to a desirable head, a leader started and all except the leader cut back. Even when transplanting woody plants with a ball of soil adhering to the roots, "heading back" is essential though not to such a high degree. Obviously in transplanting herbaceous perennials pruning plays no part.

The mere digging of a hole, placing the plant in and throwing in a few spadefuls of soil will rarely result satisfactorily.

For our heavy soils sheep manure and lime form an invaluable combination, often producing seemingly miraculous changes in a brief period of time. For quick action, in border plantation of hardy flowers 30 pounds of sheep manure and 10 pounds of lime for every 100 square feet produce satisfactory results.

The proper preparation of soil for hardy flowers will often spell success especially when young pot grown plants are set out. In order to become thoroughly acclimated to the heat of the summer and the cold of winter, growing facilities must be provided which will keep the plant vigorous and insure full development before winter. The planting distances for herbaceous perennials are quite variable, though it is a safe rule to plant them apart half their total height, thus Foxgloves growing to 3 ft. in height should be planted 18 inches apart, or Hollyhocks reaching 5 ft. should be spaced 2½ ft.



Half the battle—nay, almost all—lies in giving the newly arrived stock an even chance to live. Keep sheltered, plant firm in ample holes and prune back

holes twice. The day after the water has soaked away fill the holes with good soil. Tramp this down and then add the poor subsoil but leave it loose to serve as a mulch and hold the moisture below.

Staking and Tying

WHERE strong winds are likely to blow, place stout stakes on the leeward side and tie the trees to them. The best tying material is strips of burlap or other cheap cloth about two inches wide. Injury to the trees may be avoided by placing each strip between the stake and the tree, carrying each end around the trunk, then carrying each end around the stake from opposite sides and tying between the stake and the tree. Both tree and stake are thus completely encircled by each strip and the bands are more likely to stay in place than if tied by any other method. Moreover, no strangling of the tree should occur because the bands can always be loosened in a moment.

Cutting Back

AFTER the trees have been planted, cut off all twigs not desired and shorten those that are to form the frame work. Fifty per cent. of these frame branches is none too much to remove. Better have the frame branches placed low—the lowest 6 to 12 inches above ground. This pruning is essential to balance the unavoidable loss of the roots when the stock was dug. Cutting

THE PATRIOTIC GARDEN

FOOD F-O-B THE

He also Fights who

EAT • FRUIT • AND • SAVE • SUGAR

KITCHEN DOOR

helps a Fighter Fight

H-HOOVER

EAT • NUTS • AND • SAVE • FAT

Managing a Half Acre War Garden FRANCES JOHNSTONE PARIS

Feeding a Family of Eight

EDITOR'S NOTE.—Among the many, very many, war-garden campaigns of last year none was more successful than that conducted by the Garden Club of Flushing, N. Y. It is, of course, but typical of many others. At the beginning the active coöperation of other local organizations was enlisted and a definite, aggressive programme laid down. The author of this article was Chairman and "saw things through" to the end. This year the work is being carried farther and on a larger scale stretching out far and wide, and enlisting all local efforts and the country and state agricultural organization. Mrs. Paris's own garden was a success, and she plans to repeat it this year. This article tells what she did and how; and it will serve as a reliable guide to the home gardener who wants results this year.

MY GARDENING experience heretofore had been confined to the growing of a few beloved flowers, some tomatoes, and salads of various kinds. Urged by patriotic considerations, I decided to see what could be done on a half acre of ground by intensive gardening of vegetables. The result is here set down for a guide to the 1918 intensive gardener.

Half of this ground had been used the previous year for celery and Dahlias, the other half being new sod ground. All was covered with well-rotted stable manure, plowed, disc-harrowed, raked down by hand, and all sticks, stones, etc., removed. The garden was divided into two parts with paths through the centre and rows on either side ninety feet in length running north and south to get the advantage of the sun. One fourth the space was reserved for corn and potatoes.

The ground was cold, but dry, so early varieties of peas and spinach were planted on the second day of April. Before planting,

the peas were inoculated with Farmogerm. Peas are a cool-weather plant and must become well established during April if crops are to measure up to expectations. Furrows were made, the seed put in, the ground pressed down firmly, and the magic work of nature began. New York Market, Gradus, Sutton's Excelsior, Duke of York, and Telephone were all planted by the seventh of April. These varieties matured in the order named and furnished a continuous supply from June the fourteenth to the very last of July. One row was planted to Long Season spinach which, with monthly sowings, gave a constant supply throughout the season. Lettuce, radishes, parsley, and onions had previously been planted in cold frames.

Both the early and late varieties of tomatoes, Earliana, Chalks' Jewel, Stone, and Ponderosa had been planted in flats the last day of February. After twice transplanting, they were set in coldframes the middle of April, and transplanted into the open ground, three or four feet apart each way, the latter part of May. The early varieties were left

to grow without training, but the late varieties were pruned and tied to stakes five to six feet in height. Fewer, but much larger and superior fruit resulted from this method. An occasional spray with arsenate of lead helps counteract blight and leaf curl. The large green tomato worms should be picked off and destroyed.

Early carrots, turnips, beets, endive or escarolle, and romaine lettuce were planted in rows for succession.

Cultivation or grinding up of the soil gives plant life more to feed on. Therefore, frequent and thorough cultivation was given to conserve moisture and release humus. For cultivation and keeping down the weeds, which act as pumps drawing moisture from the soil, I found nothing to equal the use of the wheel-hoe with its numerous attachments.

Three bushels of Maine white potatoes were planted, one eye to a hill, in mellow, but not too rich soil. The cuttings were dipped in a formaline solution for one hour to prevent scab. The potato plants were



Here's a well-ordered patriotic garden in Cleveland, Ohio. Mr. Slivka grew a full supply of twenty varieties of vegetables and an abundance of flowers for cutting. We must not forget those "rays of sunshine" in this year's war gardens

sprayed as a protection against the potato bug and the potato blight. I used three or four pounds of arsenate of lead in fifty gallons of bordeaux mixture.

Parsnips, leeks, and onions being all season crops, were tucked away on the outskirts of the garden.

Golden Self Blanching and Winter Plume celery seed were planted the first of May and were twice transplanted before being set into permanent place. Celery requiring a very rich moist soil, trenches were dug 12 inches deep, partly filled with old rotten stable manure and covered with finely pulverized earth to almost the level of the ground. The plants with tap root and half the top growth of leaves cut off, were set in place six inches apart and rich earth filled up around them as they grew. During hot dry spells I flooded the trenches thoroughly with water once a week.

Eggplants, green and sweet peppers were not set out until June the first when all danger of frost was over. Two dozen plants of each furnished our family of eight with all we could use during the season and left some for canning. One prize eggplant from this crop weighed six pounds.

Plants of savoy and red cabbage required more care than any other one thing in the garden. Almost from the first they seemed the attraction for all the eating insects known. Constant spraying with bordeaux mixture and wood ashes stirred in the soil around the plants finally rewarded us with some very fine heads.

Bountiful, red valentine and refugee beans were used for early planting followed by later varieties for mid-summer and fall use.

Lima beans, both pole and bush, proved among the most desirable products of the garden and were not planted until the soil became thoroughly warm in June. They will not give good results if planted in poor soil. Burpee's Fordhook, Bush Lima and Pole Lima varieties were used. Beans should never be cultivated after a rain when the foliage is wet. Whitloof the familiar French endive was planted and grown to large-sized roots in

the garden. In the late fall the roots were taken up and planted according to European methods.

Beets and carrots for winter use were planted in June. Cabbage and Green Prolific cucumbers, for pickling, were planted July 1st for late crops.

The first spinach was ready for cutting the fifth of June, and in the mean time the cold-frames were furnishing a steady supply of radishes, onions, parsley, and lettuce.

June the 18th, the early peas being spent, the vines were pulled up, the ground fertilized with commercial fertilizer and the second planting of corn put in.

Even war gardens have their humorous experiences and I must tell what happened to my first planting of corn. Five rows of Golden Bantam and Country Gentleman, 40 feet each, were planted in the usual manner. After a few days, the corn sprouts popped through the ground. Imagine my surprise

stand is why they left the green sprouts. More corn was planted at once, after a bath in tar to keep the crows from repeating their first offense. Sweet corn may be planted for succession up to July 15th or even later.

Squash, Japanese pumpkins and Early White Spine cucumbers were planted among the corn. The Japanese cucumbers were trained over a wire fence and made a very attractive border for one end of the garden, and at the same time furnished the most tender, sweet, and delicious cucumbers ever grown.

The Pole beans were planted in two rows along the western and southern border of the garden and presented a most prosperous appearance besides shutting in the garden from the outside world.

The Proof of the Pudding

THIS garden furnished a constant supply of fresh vegetables for a family of eight from June the fifth throughout the season, besides root crops and celery for winter use. Three hundred quarts were canned by the One Period Cold Pack Method recommended by the Department of Agriculture at Washington, without loss of a single jar, excepting a few jars of corn canned by the old-fashioned methods.

Twenty-one bushels of peas, nineteen bushels of beans, sixteen bushels of potatoes, four bushels of parsnips, six bushels of turnips, five bushels of carrots, five bushels of tomatoes, and thirty-five hundred stalks of celery represented part of the reward for our efforts.

The coldframes were filled with lettuce, radishes, and spinach enough to last until Christmas and later.

The entire cost of the garden stood, as far as I remember, as follows:

Cost of seed for garden, including seed potatoes—\$22.45.

Commercial fertilizer \$11.

Plowing, harrowing, \$4.00.

Wheel hoe, \$6.50.

Rotten manure from our stables no cost. No help was employed in the garden except the spare time of my one man of all work.

Japanese Cucumbers	Gradus Peas	Telephone Peas	Pole Beans
	N.Y. Market Celery	Sutton's Excelsior Peas	
	Bush " Beans	Early Turnips	
	" "	Egg Plant - Peppers	
	Potatoes	Spinach	
	" "	Beets	
	" "	Carrots	
	" "	" "	
	Corn Cucumbers	Tomatoes	
	" Pumpkins	" "	
Dahlias	" Squash	Pole Beans	Dahlias
	Pole Beans	" "	

A plain chart such as this (made for a $\frac{1}{2}$ acre garden) is a very practical aid in planning for succession plantings

and consternation, on going into the garden the next morning to see all the green sprouts lying along the rows and the seed corn gone. My man of all work and general helper told me that, when he went into the garden at 7 A. M., a great flock of crows flew up from the corn rows. The greedy things had stolen all my corn! What I cannot under-

No Space for Fruits?—Nonsense! M. G. KAINS

With Lessened Commercial Orchard Production Ahead, Now is the Time to Plant Trees for Home Insurance

IN THE endeavor to meet the present need for food many people seem to have "gone off their heads," and to be running to extremes. Even "noted authorities" have lost their balance and seem likely to lead others astray; for instance, my college mate and long-time friend, Prof. U. P. Hedrick—horticulturist of the New York State experiment station, author of countless bulletins and of four great tomes on cherries, plums, grapes and peaches—if reported correctly in the *American Agriculturist*, told the Western New York Horticultural Society that "ordinarily wheat should not be used as an inter-crop, but we need bread, so stretch a point and plant it in the young orchard. Take the best possible care of existing orchards, delay new plantings, and raise more important foods."

Nailing it Down

TO GROW cereals and to "take best possible care" of orchards involves a contradiction of terms; and to "delay new plantings" is far too sweeping advice, for, coming from so prominent a man, it is likely to be accepted and acted upon by the very people who should disregard it; namely, the small would-be planters and home fruit growers. No greater mistake can be made than to grow the small grains, unless it be hay, among fruit trees because these crops more seriously than any others rob the trees of food and moisture. Similarly, for the owner of a small area to postpone planting until after the war will be to postpone gathering the fruit for an equal number of years. Then everybody will be in the same boat and the advantage of planting now will have been lost.

No Time for the Home Planter to Lay Down

LET the commercial planter tremble if he will; but it's all nonsense to delay small home plantings. *Never in the history of this nation has it been more important to plant fruits for home use as well as for the local market.* Because of the shortage of labor commercial growers will have greater difficulty handling their acreages, but especially in harvesting; and because of congestion of freight and express traffic less fruit is likely to reach the markets. Therefore the necessity of planting fruits to supply the home and the opportunity to make profitable investments in small plantations to meet local demands.

As I pointed out in *THE GARDEN MAGAZINE* for January it is not necessary to wait weary years before fruit can be gathered. Some may be harvested the same year as the plants



A peach comes into bearing very soon and can be eliminated as the longer-lived trees mature

are set, a larger amount the next year, and increasing quantities each year thereafter. Now, my aim is to emphasize the fact that very considerable economies may be made without in the least jeopardizing the success of the trees and bushes, if interplanting is intelligently planned and the plan properly carried out. Perhaps the best way to explain this will be to use a diagram.

All Fruits on the Average Suburban Lot

SUPPOSE an area which easily divides into units, say 48 feet square. I use this unit because it is approximately the size of many suburban back yards. Suppose that we want a succession of all the kinds of fruits and as many varieties as that area can be made to produce. What can be done?

Plant a standard apple tree at each corner. If desired we may have four varieties grafted on each tree as Mr. Hamblin pointed out in THE GARDEN MAGAZINE of February. If we have each of the four frame-branches on each tree grafted each with a variety that ripens at a different season we may have an unbroken succession of fruit from early summer until late spring and by this plan will theoretically distribute the energies so that the tree will not feel a "drain" at any time. The same plan may be followed with each of the tree fruits so that by multiplying the number of trees mentioned by four we will have the number of varieties possible to grow under the plan being discussed.

To proceed: in the centre of the square place a sweet cherry

tree, preferably of a variety not locally obtainable, for instance Black Tartarian, Governor Wood, Bing, or Schmidt. Half way between the apple trees place peach trees of varieties that will form a succession. Champion or Hiley, Crawford Early, Old Mixon, Lamont, and Millet will cover the season from mid August to mid October. In the centres of the small squares place successional varieties of plums. Abundance and Burbank are good early ones; Middleburg and Archduke good late. Instead of two of the plums or the peaches use sour cherries if preferred. The best varieties for succession are Early Richmond, Montmorency, and English Morello. Half way between the trees already set place dwarf trees—mostly pears (Angoulême, Louise Bonne, Morceau, Anjou, White Doyenne and Comice)—but some apricots (Harris, Moorpark, St. Ambrose, and Large Early) and perhaps some cherries, plums, and peaches. In the first row reading up and down place a currant bush (Ruby, Pomona, Perfection, and Wilder) half way between each two trees; in the second, a gooseberry bush (Red Jacket, Dr. Van Fleet, Poorman, and Chataqua); in the third, fourth, and fifth, a black raspberry plant (Black Diamond, Farmer, Kansas, or Gault).

The trees and shrubs in these rows are now 6 feet apart—a liberal distance even according to best practice. Between the rows are 12-foot spaces. In the middle of the first of these plant a continuous row of red raspberries, the plants being set 3 feet apart in the rows; for instance, Cuthbert, Herbert, St. Regis, Marlboro, or Douboro. In the second, a purple kind for canning (Shaffer, Columbian, Philadelphia, or Cardinal). In the third, Golden Queen, which is the only really good yellow variety now generally obtainable in the nurseries. The fourth row may be of blackberries (Joy, Kittatinny, Mercereau, Blowers, or Eldorado). A row of Lucretia dewberries may be substituted for any one of these. There's space enough if the blackberries are kept within bounds by judicious pruning.

Room for Vegetables Too

READING up and down on the chart there are six foot intervals between the rows as well as between the plants in the tree rows. In each of the former there is space for a row of vegetables (preferably of kinds



Why not an apple tree, at least in every home garden. The investment is small and when fruits come, Oh! —!

that demand clean cultivation until mid-summer, but not during August or September, because tillage during those months tends to encourage late growths of trees and consequent winter injuries). Stirring the soil during October as in harvesting the vegetables is perhaps not objectionable unless deep as in digging potatoes, parsnips, and other deep-rooted vegetables.

And the Strawberries as Well

STRAWBERRIES may be grown instead of the truck crops. Three plants 18 inches apart may also be set between the trees and shrubs, thus giving 24 plants to the row or 120 to the patch. If everbearing kinds are used (such as Progressive or Superb) they will yield the same season as planted and again the following summer, but will probably fail toward the close of the second year because of the shade and the

demands of the trees and bushes for food. The other strawberry rows which would be of "ordinary" kinds will bear the season following and if well managed bear again the next year, though this is not usually advisable. Premier, Dr. Burrill, Ekey, Chesapeake and Orem will cover the general season from early to late. Immediately after gathering the fruit the plants should be plowed under, the furrows harrowed or cultivated level and a dust mulch maintained until after raspberry and blackberry harvest. If the strawberry plants are



Interplanting vegetables in the young orchard helps it pay its way. Now-a-days it is wisdom to prepare for the demand for fruit that will surely come, by interplanting the vegetable patch

set 18 inches apart there will be 33 to the row or 264 in the eight rows.

Forecasting the Harvest

THE way such a plan should work out will be about as follows: The various vegetables will occupy the inner-row spaces one or not more than two seasons. Preferably all the first and not more than the first half of the second. If strawberries are used instead of truck, the ever-bearing kinds between the trees and shrubs will yield during the fall of one year and the summer of the next, those in the other rows the season following planting and perhaps the succeeding year. The currants, gooseberries, raspberries, etc., may begin to fail in from four to six years after setting because of the shade and the food and water demands of the trees. They must be destroyed as soon as this is noticed, because they are temporary, whereas the trees are the permanent investment.

Probably the dwarf trees will begin to fail in six to ten or twelve years and will have to follow the berries because the standards will need the space. Perhaps the peaches will fail between eight and fifteen years, though under good management they may live twice as long. If commercial orchardists—a few of them—make the peach live and continue profitable for thirty years, surely the amateur should do at least as well—unless the other more permanent trees need the space. The plums may last for ten to twenty years or even twice as long. The sweet cherry has the natural longevity to continue for upward of fifty years and so have the apples. In this plan it is only a question of the space needed for each.

The carrying out of such a plan as here outlined demands considerable "backbone," for as each more important but slower growing plant needs more space its demands *must be met by the removal of the less important ones*. Unless this is done the latter will not only fail more and more each year to produce well but they will rob the former and impair both the yield and the health of the trees.

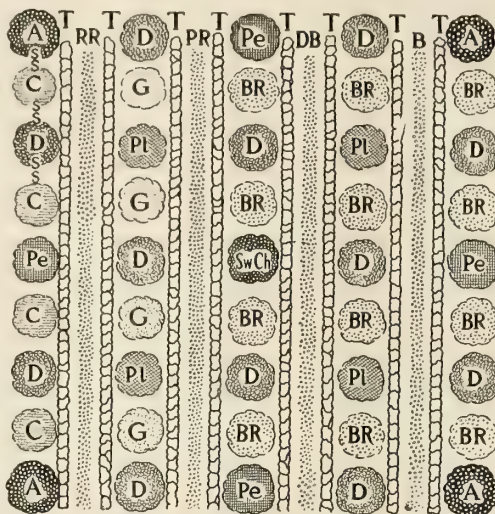
Keeping it up Later

CLEAN cultivation is the next essential. Keep the surface inch or two of soil loose and open until midsummer. Then if the fruit plants are making good lustrous green foliage sow buckwheat or crimson clover or a mixture of both on the bare parts to serve as a cover crop. The buckwheat will be killed by the frost; the clover probably by the winter at least in the North. It is desirable not to have the crop live through the winter because in the spring it might not be plowed soon enough to prevent its robbing the trees and bushes of water and plant food. On this account rye and winter vetch are often objectionable, at least so long as the berry and currant bushes are leafing. Earliest plowing and harrowing possible is the invariable rule in areas large enough to be worked by a horse; digging and raking in smaller ones.

Where Grapes Fit

IT WILL be noticed that this plan takes no account of grapes. These had better be kept by themselves because they do not fit well with the tree and bush fruits. A good way to manage with them is to train them on the canopy or Munson trellis, the lowest wire of which is $4\frac{1}{2}$ or 5 feet from the ground thus permitting currants and gooseberries to be planted in the same rows with the vines

and under the partial shade of the foliage. The plan which is satisfactorily followed by commercial planters in the Hudson Valley and elsewhere, has special value for home plantations because it conserves space. If it is followed, eight more black raspberry plants



Here's a practical planting chart for the home plot to include both fruits and vegetables. This scheme is based on rigid adherence to the plan of cutting out temporary trees and bushes as the permanent ones develop.

Key: A, Apple; C, Currant; D, Dwarf; Pe, Peach; G, Gooseberry; Pl, Plum; Sw Ch, Sweet Cherry; RR, Red Raspberry; PR, Purple Raspberry; DB, Dewberry; B, Blackberry; S, Everbearing Strawberry; T, Truck vegetables or ordinary Strawberry; BR, Blackberry.

may be planted in each orchard unit block already discussed.

Plans such as these in which heavy demands are made upon the soil because of the intensive planting cannot be worked successfully unless the soil is well fed and well managed, and unless the trees, bushes and other plants are pruned and trained to "stay put." For this reason they have special interest to amateur planters because they afford such splendid opportunities to excel the best efforts of commercial fruit growers.

Make Sure of the Food Reserve

WHEN preparing to plant be sure to have the land well drained, plowed, and subsoiled, if large enough to work with horses; or trenched if not. With lavish hand broadcast phosphate fertilizers such as raw and treated phosphate rock. For potash use unleached wood ashes from the fireplace and the stove—if you burn wood. In each hole dug for a tree, a bush, or a vine throw all the old bones obtainable in the neighborhood. To supplement these—for there are sure to be too few to be liberal with all the trees—add ground bone or bone meal which is obtainable of the seedsman and fertilizer dealers. No damage need be anticipated from such materials.

Be chary in using nitrogenous fertilizers because they tend to make sappy growths which may be injured by winter. The only safe time to use them is in the spring. If the soil has been manured or if it is well supplied with vegetable matter there will probably be no need to add any nitrogenous plant food. The way to determine whether or not any is needed is to notice the color of the foliage. If this is a pale, jaundicy, yellowish green during May then scatter about a pound to each 400 square feet (20 x 20 ft.) as long before June first as convenient—not later.

Ready References for Busy Planters

DON'T keep on gardening with antiquated tools. Learn to enjoy the quick and easy operation of a wheelhoe. There is lots of fun in having a plow, a cultivator, a weeder and what not at one's disposal via the convenient means of a wrench. Man was never intended to stoop ever while working. The wheelhoe gives him a chance to exercise his prerogative as a man—to walk upright.

DON'T forget the many novel helps available to push garden operations rapidly ahead this month. The sun is high enough this month, but cold winds generally undo part of the good work of the sun. Plant forcers, forcing frames, cloches, and many other handy inventions are designed to increase results from early garden efforts. Take advantage of such helps.

Depth to Cover Seeds

BEANS 2 inches; Beets $1\frac{1}{2}$ in.; Carrot $\frac{1}{2}$ to $\frac{3}{4}$; Corn 2 in.; Cucumber $\frac{3}{4}$ to 1 in.; Lettuce $\frac{1}{4}$ to $\frac{1}{2}$ in.; Onion sets 1 to $1\frac{1}{2}$ in.; Parsley $\frac{1}{4}$ to $\frac{1}{2}$ in.; Parsnip $\frac{3}{4}$ to 1 in.; Peas 2 in.; Radish $\frac{1}{2}$ in.; Salsify $\frac{3}{4}$ to 1 in.; Spinach 1 to $1\frac{1}{2}$ in.; Turnip $\frac{1}{2}$ in.

Vegetables Required for One Person

BEANS (bunch) 10-ft. row; Beans (pole) 4 hills; Beets 10-ft. row; Cabbage 10 plants; Carrot $7\frac{1}{2}$ -ft. row; Cauliflower 5 plants; Celery 30 plants; Corn 8 hills; Cucumber 2 hills; Eggplant 5 plants; Lettuce 10-ft. row; Onion sets 10-ft. row; Parsley 5-ft. row; Parsnip 10-ft. row; Peas 20-ft. double row; Pepper 5 plants; Radish $2\frac{1}{2}$ -ft. row; Salsify 5-ft. row; Spinach 15-ft. row; Tomato 8 plants; Turnips 10-ft. row.

Distance Apart to Plant

BEANS (bunch) 2-in. rows, 3 ft.; Beans (pole) $2\frac{1}{2}$ ft. each way; Beets $1\frac{1}{2}$ -in. rows $1\frac{1}{2}$ ft.; Cabbage 18 in. x 24 in.; Carrot 1-in. row, $1\frac{1}{2}$ ft.; Cauliflower 18 in. by 24 in.; Celery 5-in. rows, 3 ft.; Corn (sweet) $2\frac{1}{2}$ ft. each way; Cucumber 5 ft. each way; Eggplant $2\frac{1}{2}$ ft. each way; Lettuce sow thinly in rows 15 in. apart; Onion (sets) $1\frac{1}{2}$ -in. rows 10 in.; Parsley 2-in. row, 15 in.; Parsnip 1-in. row, $1\frac{1}{2}$ ft.; Peas 2 in. in 8-in. double rows $2\frac{1}{2}$ ft.; Pepper 2 ft. apart each way; Radish 1-in. rows, 10 in.; Salsify 1-in. rows, $1\frac{1}{2}$ ft.; Spinach 2-in. rows, 12 in.; Tomato $2\frac{1}{2}$ ft. each way; Turnips $1\frac{1}{2}$ -in. rows, $1\frac{1}{2}$ ft.

Early Potatoes in the Small Garden

POTATOES are not generally the most profitable thing to grow in the small garden; do not plant them until you are sure you have room enough to grow all you will want of most other vegetables for both summer and winter. Then for sure and certain early growth, start tubers into partial growth before planting. They may be spread outside in a warm place, or, better still, cut into pieces suitable for planting and placed on moist sand in a frame or in the greenhouse. Put in full sunlight; keep watered. Roots will develop rapidly while the tops remain short and stocky. Plant as usual covering up tops completely; they will be through the ground in two or three days, and be ten days to two weeks ahead of seed planted in the usual way.

Seeds Are As Gold This Year F. F. ROCKWELL

Making the Most of What You've Got Because of Seed Shortage—Every Seed Contains a Plant—Try to Get a Perfect Plant from It

IN THE present crisis, seeds are in fact more valuable than gold; for seeds can be turned into food, and gold alone can no longer be transmuted, at will, into food. And food is the great essential, the one thing that must be placed ahead of everything else. Therefore the slogan of every gardener, this year must be **MAKE EVERY SEED COUNT!**

This year there is not only no seed to waste, *there is actually not enough to go round!* And the seed waster and the seed hoarder are just as reprehensible as the food wasters and hoarders; in fact more so. Any one who fails to do his best to get a fully developed, perfect plant from every seed he uses, is a social slacker. He should be afraid to look his fellow commuters in the face when he meets them on the morning train; or she should be ashamed to face her friends at the Red Cross or the knitting circle.

BUT we have not been wasting seeds all these years in mere wantonness. Heretofore *oversowing was the cheapest way of assuring a full stand of plants.* Seed was so cheap that planting more than was really needed, and then pulling out and throwing away the surplus plants, was the most inexpensive way of making sure of getting all the plants that were wanted. To proceed on that basis this year would be little short of criminal. Of course we still want to make sure of getting a full stand of plants in every row. But we can do it by *planting more carefully.*

Make Every Seed Count!

EVERYONE who has a garden to plant this year should take the following steps to **MAKE EVERY SEED COUNT:**

1. Test all seed carefully, so you will know how thickly it must be planted to give a full stand. (see below)
2. Prepare a perfect seed bed, so that every seed planted will have a hundred per cent. opportunity to germinate.
3. Do not plant too early, wait until conditions are right for a high per cent. of germination.
4. Plant carefully, so that seeds will be evenly spaced and covered to a uniform depth.
5. Use plants instead of seed, where possible, as seed will go farther if started and transplanted, than if sown where the plants are to grow.
6. Pre-sprout seeds that are likely to germinate poorly, such as melons, cucumbers, squash, lima beans, etc.

In ordinary times many seeds are sown from ten to a hundred times as thick as the plants should stand in the row! This is done because gardeners, from experience, do not expect all the seed they sow to come up. The only way to *know* how thickly you must plant seed to expect a good "stand" is to test it before planting, especially if it is seed you have carried over from last year, or grown yourself. I do not mean by this that even with a test you can figure out the *exact* number of seeds to plant, because allowance must be made for other factors. But testing your seeds will be removing one of the uncertainties. If only 50 per cent. germinates you will know that you must plant more thickly than if 80 per cent. germinates. The methods of seed testing have been described heretofore in *THE GARDEN MAGAZINE*. Briefly, you can use either the "soil test" or the "blotter test"; the latter is preferable if you have a frame or a sunny window where you can maintain an *even* temperature of fifty degrees or so minimum.

BLOTTER TEST.—Put an exact number of seeds on a moist blotter, placed on a plate or saucer, and cover with a second plate or saucer of about the same size; add water as necessary to keep blotter constantly moist, not soaking wet; keep in warm place; remove seeds as they sprout; and figure out percentage

of germination. (Remember that equal results cannot be expected when seed is sown out of doors.)

SOIL TEST.—Prepare flat as for sowing seeds (see *GARDEN MAGAZINE* for March), using light soil, half leaf mold or humus; sow exact number of seeds, to usual depth; cover flat with loose fitting glass. One to two dozen samples of seed can be tested in a single flat; the seeds are put on thickly as they are removed as soon as they germinate.

Why Poor Gardeners Have "Poor Seed"

PROBABLY 90 per cent. of the seeds sown in home gardens are planted on ground that is not as thoroughly prepared as it could be and should be. Without doubt this is the biggest single cause of poor germination.



Sow seeds carefully for they are in limited supply this year. Use freshly turned fine soil and cover properly (see page 128)



Remember to thin out early enough and transplant when possible. It is not an economy to let food plants crowd one another

nation. The gardener who puts seed into poorly prepared soil this year will be a deliberate seed waster. It is not enough to thoroughly plow or spade and harrow or rake the garden; that is *preliminary* work. Seed should be planted on a **FRESHLY PREPARED** surface, raked over until it is smooth and fine and wholly free from lumps of soil, trash and stones. There is only one way to get soil in that shape—*work* at it. But these requisite

conditions can be given only when plenty of fresh, loose, fine soil is available for marking the drills and covering the seed. So don't waste seed this year by planting on a half prepared seed bed.

To stand a full chance of sprouting, every seed should have the soil packed firmly about it, not be covered too deep; and have no obstruction above it to prevent its "coming up" after it does germinate.

TEMPERATURE also must be considered. Another prolific cause of poor germination has been planting too early. To gain a few days on having our first vegetables ready for table, we have been willing—and rightly so, when seeds were plentiful and cheap—to sacrifice seeds for earliness. But, it will not be good citizenship to do that this year!

TO MAKE EVERY SEED COUNT delay those first extra early plantings of peas or corn or beans, on which you have been wont to "take a chance," until you feel reasonably safe.

But you need not sacrifice earliness if you really must have it. The use of some of the numerous excellent plant forcers and plant protectors, and of nitrate of soda or some other stimulant, will probably make up for any time you lose, and also help to save seed. The continuous row forcers make it possible to plant first sowings extra early without risking seed and results.

Plant Carefully This Year

WE HAVE been very careless about planting heretofore, because it was cheaper to waste some seed in careless planting than to take the time to plant with real care. The two important things to aim at—are even distribution of the seed, and uniform depth of covering. With seed of good germination—85 or 90 per cent. or more—and careful planting—seeds sown as thinly as the following amounts should give a satisfactory "stand": Except where noted a foot of row is the unit.

Asparagus, 12.	Lettuce, 20 to 25.
Bush beans, 6 to 10.	Melons, musk (in hills) 10 to 12.
Lima beans, 5 to 8.	Watermelons (in hills) 8 to 10.
Pole beans, 4 to 6 to hill.	Okra, 6 to 8.
Beets, 15 to 20.	Onions, 50 to 75.
Carrots, 25 to 30.	Parsley, 25 to 30.
Celery (for plants) 40 to 50.	Parsnips, 20 to 25.
Cabbage (for plants) 25 to 30.	Peas, 15 to 20.
Cabbage (in hills to remain) 5 or 6.	Pumpkins (in hills) 4 to 6.
Cauliflower (for plants) 35 to 40.	Radish, 15 to 25 (small varieties, latter figure).
Chard, 8 to 10.	Salsify, 25 to 30.
Corn (in drills) 2 to 4.	Spinach, 20 to 25.
Corn (in hills) 4 to 5.	Squash, 5 to 7.
Cucumbers (in hills) 8 to 10.	Turnips, 25 to 30.
Kohlrabi, 25 to 30.	

Be careful in opening up the drills, to make them of an even depth; frequently, when made with a hoe-handle or some other improvised tool, they will vary from a half inch to an inch and a half for the same seed; under these conditions it is impossible to cover the seed to a uniform depth, and much of it is sure to be smothered. There are now obtainable for use in very small gardens very simple small hand seeders which do a much better job than ordinary hand sowing. If using a regular seed drill test it out for dropping before you begin sowing, and regulate it carefully for depth *after* you begin planting, as the depth of sowing will depend on the condition of the soil as much as on the adjustment of the machine.

When to Plant in Any Part of the Country

Handling the Seeds to Get Early Crops—Temperature and Temperaments—Tricks of Experience

THE inexperienced gardener soon learns that plants such as tomato, pepper, melon, and eggplant, which have been brought from their native warm countries to grow in our cool or cold climate gardens are like spoiled children; they still insist upon having what they consider comfortable temperatures or they will refuse to grow, and if the temperatures are low they will sulk or even die. Similarly, plants of even the hardy northern species, such as cabbage, celery, lettuce, and onion, if started in greenhouses or hotbeds, will be just as tender because of this pampering and will be just as sulky and tender.

Experienced gardeners overcome this tenderness by "hardening-off" plants of

warm climate and cold climate crops alike. After the seedlings have made a good start they are transplanted and made to grow in temperatures relatively lower than they like, but not low enough to do them injury. Under such conditions they grow more slowly but more stockily, and are therefore better able to withstand relatively low temperature and to "take hold" of the soil quickly when transplanted to the garden.

For convenience, the vegetables to be grown out of doors may be grouped under two general headings, tender and hardy, and each of these classes may be sub-divided into two minor groups depending upon whether the seeds are first sown under glass or out-of-doors.

The warm climate or tender vegetables include eggplant, melons, beans, corn, pepper, okra (or gumbo), squash, tomato, sweet potato, Irish potato, and pumpkin. These will tolerate neither frost nor continued low temperatures.

The hardy vegetables which if not coddled or mismanaged will often stand several degrees of frost are: French and Jerusalem artichokes, asparagus, beet, broccoli, brussels sprouts, cabbage, cardoon, carrot, cauliflower, celery, celeriac, chicory, collards, endive, kale, kohlrabi, leek, lettuce, mustard, onion, parsley, parsnip, peas, peppergrass, radish, rutabaga, salsify, sea kale, spinach, and turnip.

Use of Glass for Early Start

PLANTS of some of the vegetables in each class are started under glass so the seedlings may be transplanted out-of-doors when conditions begin to be really favorable for their growing. Thus early cabbage is started in the greenhouse or the hotbed in February or often in January. The seedlings are ready to transplant to coldframes, or at least cooler quarters, in a month to six weeks.

Then seeds of tomato, pepper and other tender crops are sown in the hotbed thus vacated. By the time the tomato seedlings are large enough to be transplanted to the coldframes the cabbage plants may be set in the garden, and by the middle to the latter part of May out-of-doors. *It is wise to wait until all danger of a late spring frost has passed before transplanting the tender plants to the open ground so as not to chill or check them.*

Other hardy plants such as broccoli, cauliflower, kohlrabi, may be started in the same way as cabbage and followed by various members of the tender group—cucumber, okra, pepper, melon, eggplant, etc.

Such methods are not necessary for hardy kinds, because seeds of all these sown as early as the ground (in a sunny, sheltered and therefore warm situation) can be worked will grow well. Later they will produce edible sized vegetables during any normal season. On the other hand, starting plants under glass has become so common that everyone accepts it as a convenient if not the best method. Should only a few plants of any one kind be required it may be just as well to buy them ready grown rather than to fuss with them. But don't set them in the open ground too soon. Eggplant, for instance, subjected to cold though not frosty weather will get a fit of the sulks that may last all season in spite of every later enticement. Tomatoes and peppers are nearly as touchy. Make haste slowly with all these.

Fortunately for the beginner as well as older hands the various ways in which vegetable seeds may be sown and the plants handled can be stated succinctly and referred to by key numbers as in the accompanying table. Taken together we thus have the methods of starting and growing 52 different of the leading kinds of vegetables grown in the United States and Canada. In a general way this applies to the area from Connecticut to Iowa. If you live outside of this belt you should calculate on planting one week earlier for each 100 miles your locality is to the south or one week later for each 100 miles north. If you reside in a mountainous part of the country you should plant later than if your place is in low lands. Study the zone map on page 127.

ADJUSTABLE PLANTING TABLE FOR VEGETABLE SEEDS

Generally adapted to zone of Connecticut and Iowa. (Zones C and D of map on page 127). Allow a week earlier or later for each 100 miles south or north accordingly; also make allowances for altitude

VEGETABLE	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
Artichokes, Jerusalem			7	7					
French	I		3	3					
Asparagus		3	3						
Bean, bush			7	8	8	8			
lima				7	7	7			
pole				7	7	7			
Beet		3	3	3	3	3			
Broccoli	I	2	2	2	2	2			
Brussels sprouts	I	2	2	2	2	2			
Cabbage, early	I	2	7						
late									
Cardoon	I		2	2					
Carrot		3	3	3	3				
Cauliflower	I	2	2	2	2				
Celery, early	I	I							
late									
Celeriac	I		2	2					
Chicory	I		2	2					
Collards		3	3	3					
Corn, sweet					8	3	3		
pop			7	8	3	3			
salad			9	9					
Cucumbers		9						6	5
Eggplant			1	2	7				
Endive		I	2	2	2	2			
Kale			2	2	2	2			
Kohlrabi		I	2	2	2	2			
Leek		I	2	2	2	2			
Lettuce	I	I	1	2	3	3	3	6	6
Melon, musk									
water		I	1	7	7				
Mustard			9	9	9				
Nasturtium			9	9	9			9	9
Okra			7	7					
Onion		I	1	2	2				
Parsley		2	3	3					
Parsnip		I	3	3					
Pea		7	7	7					
Pepper		7	7	7					
Peppergrass		I	I	2					
Potato		9	9	9	9			9	9
Pumpkin			7	7					
Radish			I	7	7				
winter		9	9	9	9			9	9
Rutabaga						9			
Salsify		3				3	3		
Sea kale		3							
Spinach		7	7					6	5
Squash, summer		9	9						
winter		I	1	7	7				
Tomato		I	1	2					
Turnip		I	3			3	3		

Condensed Directions for Sowing and Planting

1. SOW SEED IN FORCING HOUSE OR HOTBED. When the seedlings have grown two or three true leaves transplant into shallow boxes (flats) of soil or small flower pots and after they have begun to grow well remove to coldframes. Here keep the temperature rather low by ample airing. Allow abundant light but water sparingly. This will harden off and make the plants stocky—excellent for transplanting. When the ground is in good condition and the weather fairly settled, transplant to the garden. Plants properly hardened should need no protection. Should a frost occur they may be saved by drenching them thoroughly with cold water before sunrise in the following morning. Or to prevent frost injuries the plants may be covered the night before with straw, burlap—anything to prevent the loss of warmth by radiation of heat into space.

2. AS SOON AS THE SOIL CAN BE FINELY WORKED, sow the seeds thinly in little nursery beds of well prepared soil preferably in a place sheltered from north and west winds by a tight board fence or a building. Transplant the seedlings to the places they are to mature in the open ground as soon as they have formed two or three true leaves.

3. WHEN THE OPEN GROUND IS IN GOOD CONDITION TO WORK, sow seeds thinly where the plants are to grow until edible

maturity. Though transplanting may be done, it is not common because it is less sure of success than with certain other plants. Instead of transplanting the inferior and crowded seedlings the plants are thinned out so the remaining ones will have a better chance to grow well.

4. SOW IN COLDFRAMES of good soil, cover the sashes with straw during winter and transplant the seedlings to the open ground as soon as it becomes workable in the spring.

5. SOW IN THE GARDEN and protect the seedlings over winter with a liberal covering of straw, corn stalks or litter during winter. When buds of fruit trees begin to swell remove the mulch. The plants may be cut for consumption shortly after.

6. SOW IN A COLDFRAME, protect with sashes and straw mats during cold weather especially at night. Give sunlight during the day and ventilation even to the complete removal of the sashes during mild sunny weather. The crop may be gathered in late November, December, January and February.

7. SOW OR PLANT OUT OF DOORS as soon as the soil is in workable condition, placing the plants at proper distances apart as planting or sowing is done.

8. EACH TWO WEEKS make a sowing in the open garden.

9. SOW RATHER THICKLY IN THE OPEN GROUND where the plants are to remain. Cut with shears or sharp knife or pull up as soon as the plants become large enough to use.

Forwarding Seeds Sown in Open Ground

WHEN attempting to get earliest results from sowings made in the open ground, a favorite way to lessen labor, save time, and nullify losses is to soak half the seed needed for several hours—over night is the favorite period, though sometimes eighteen to twenty-four hours is employed. After the water has been drained off, the seed may be made more easy to handle by spreading out thinly for an hour or so in a place where the breeze will act on them. Now comes the trick: sow that seed and an equal amount of dry

seed—that is unsoaked seed—in alternate hills half as far apart as they should be, or short intervals of the rows.

The plan may work in several ways depending on the season and condition of the soil. If the soil is wet and cold and the air also cold the soaked seed may decay but the dry seed sprout later. If soil and air conditions are favorable to sprouting at sowing time and shortly after, the soaked seed will be the first to sprout. Should a frosty spell arrive now these seedlings may be killed. The seeds sown dry may not then be sprouted

but they should be ready to come up as soon as the weather gets warm again. Thus the labor of making a second sowing will be avoided—a gain of time and work which means more than the loss of the plants frozen. Should weather be favorable to both soaked and dry seed the plants from the latter may be destroyed later. As a general proposition it is not advisable to soak seed for the very earliest sowings, but where, through any cause, sowing must be done late, time may be gained by soaking, making the soil firm over the place.

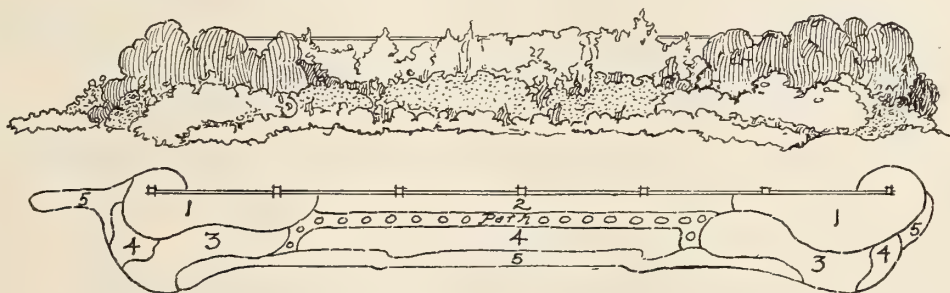
Flowers for the War Time Garden ELIZABETH STRANG

“Wearing a Potato Plant on Your Front Lawn” May Not Be so Patriotic as Raising a Few of Those “Rays of Sunshine” That Will Meet the Spiritual Needs for Solace and Recreation

THERE is no compulsion to forego the pleasure of flowers in our gardens just because unusual activity is directed toward food production. Indeed it would seem to me that flowers will be more than ever needed to offset the hours spent in cultivating the crusty cabbage, the reluctant cauliflower, the stoical potato, and the belligerent bean. And as an antidote to days that “try men’s souls,” flower borders must be particularly cheerful, and they can be inexpensive, and for a minimum of attention return a maximum of cheer and satisfaction. The accompanying plans offer several solutions and are simple.

I. A Show Border in Color Variations

FOR a conspicuous position across the front fence, or facing the well kept lawn use plan No. I. You can enjoy such a border when you pause in your hoeing to imbibe a glass of lemonade on the porch. The majority of the flowers are annuals, inasmuch as they give the most showy and



Rainbow color border (See table II). This and all other drawings in this article are on the same scale as that illustrating table V

continuous bloom for little cost. The few perennials chosen for certain effects will bloom the first year from seed, and incidentally form the basis for a permanent border another year.

The plants are selected and arranged with particular regard to their form and appearance on dress parade, so to speak. The sketch shows the relative heights and shapes of the masses. Long before the flowers appear, the feathery foliage of the Cosmos is a tall, dense background for the brighter colors. The perennial white Snakeroot, and the blue Ageratum in the foreground likewise possess the massing quality. The erect forms of the Sunflowers and Larkspur are required to relieve the rounded contours.

Sunflowers and Calendulas of clear light yellow, and light blue Ageratum and Larkspur.

A third development might be in delicate pink and blue: Flesh pink Zinnias, dull pink Coneflower, sky blue Larkspur, and blue and white Ageratum with a little annual Phlox of primrose yellow to give life to the whole. A scheme of pink and white would have Zinnias of salmon rose, more Coneflower, spikes of deep rose Larkspur and, in place of the Ageratum, some dwarf Gypsophila of palest pink tinge.

In all three variations the Cosmos counts more as a green mass than as a flower, but colors are selected to correspond with each scheme, though the blossoms appear so much later than the rest. The yellow variety must be grown in boxes set in the ground so that the roots may become pot bound and force the plants into bloom in our Northern climate.

I. THE THOUGHT-OUT COLOR BORDER IN FOUR DIFFERENT COLOR TONES

INDEX		A. INTENSE BLUE AND DEEP YELLOW	B. LIGHT BLUE AND PALE YELLOW	C. PINK AND BLUE	D. PINK AND WHITE	DISTANCE APART	
1	Cosmos 6'-8' high	Late White	Klondyke; golden yellow	Early pink	Early pink and white	18"	1 pkt. \$.10
2	Annual Sunflower 4' high	Helianthus nanus flore pleno, double golden yellow	Single miniature. Twisted petals of creamy white, pale and golden yellow	Rudbeckia purpurea. Purple Coneflower. Perennial, dull pink centres, 3' Aug.-Oct.	.....	12"	2 pkts. .20
3	Eupatorium ageratoides (White Snakeroot.) Perennial: Heads of minute white flowers, Aug.-Oct. 3'-4' high	.....	.....	.....	.....	12"	2 pkts. .20
4	Calendula 2' high	C. Orange King or burnt orange Zinnia	Sulphur yellow	Zinnias, flesh pink 2' high	Salmon rose	8"	2 pkts. .10
5	Annual Larkspur 2'-3' high	D. Dark blue or Bachelor's Buttons, single blue	Sky blue	Shell pink and sky blue	Rose pink	8"	2 pkts. .20
6	Ageratum 12" high	Blue Perfection	Princess Pauline. Light blue white centre	Princess Pauline and Primrose Yellow. Annual Phlox, 6" high	Annual gypsophila muralis, small pink flowers, 8"-10"	6"	2 pkts. .20

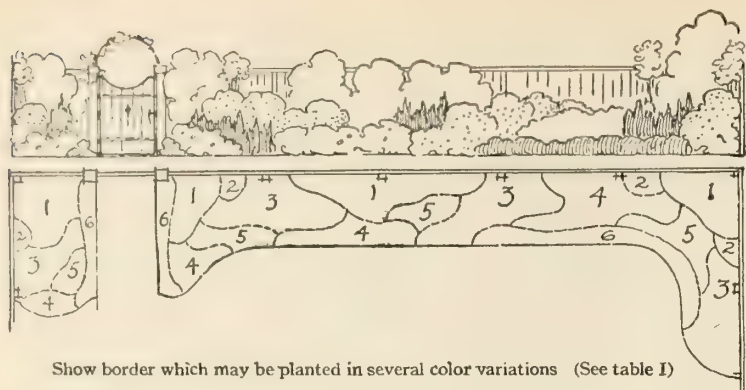
II. Informal Masses of Color

FOR a more informal place such as the end of the vegetable plot, where the lawn may run to meet the irregular line of the flowers a broader treatment will fit. You may enjoy this one while you hoe.

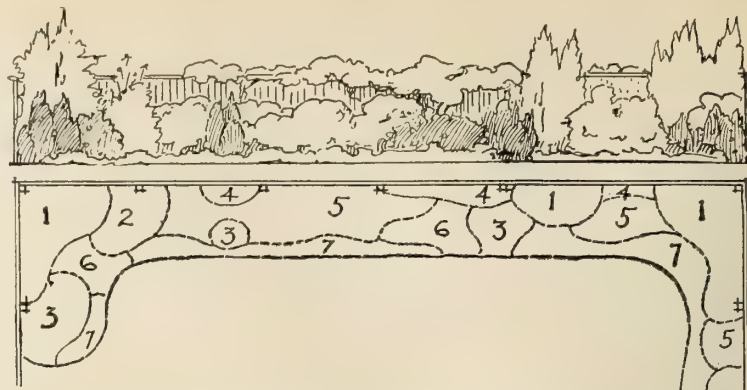
There exists a popular prejudice against mixed varieties of flowers, due in part to the crude colorings of some of these; but, unlike those painful recollections of our grandmothers' gardens, Sweet Peas and Shirley

II. THE RAINBOW COLOR BORDER

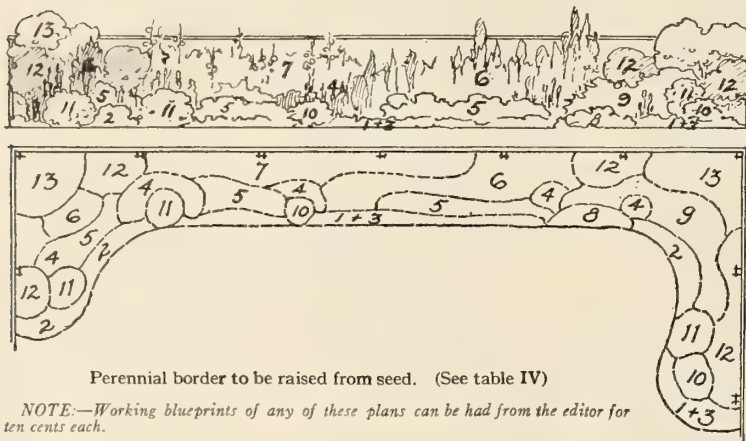
INDEX		HEIGHT	DISTANCE APART	COST
1	Cosmos, late white	6'-8'	18"	1 pkt. \$.05
2	Sweet Peas, mixed	4'-6'	do not thin	1 oz. .20
3	Annual Asters, late branching, white	2'	12"	1 pkt. .10
4	Shirley Poppies mixed	18"	thin to 4'-6"	1 oz. .40
5	Candytuft, tall fragrant white	12"	thin to 2"	1 oz. .25



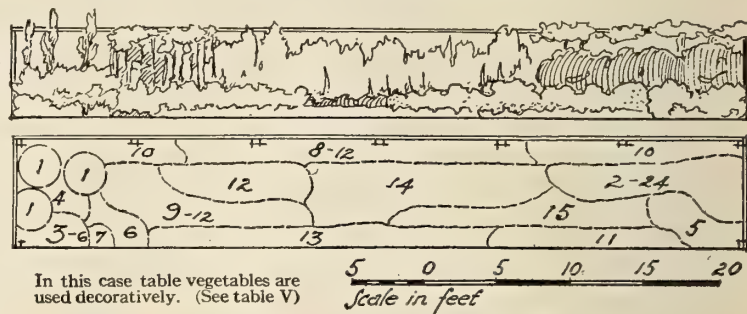
Show border which may be planted in several color variations (See table I)



Even the poorest soil can be effectively handled. (See table III)



Perennial border to be raised from seed. (See table IV)



In this case table vegetables are used decoratively. (See table V)

Scale in feet

NOTE:—Working blueprints of any of these plans can be had from the editor for ten cents each.

Poppies in a mixture give a delightful effect of delicacy and variety, which is softened and relieved by pure white masses of Asters and Candytuft. White Cosmos masks the sharp line of the trellis.

For those who prefer selected colors, this plan is capable of an infinite variety of combinations. Both Asters and Sweet Peas may be had in tints of shell pink, cream, rose, and lavender. These may be used both in harmonizing or contrasting effects. Lavender or pink Candytuft may be substituted for white, and selected strains of Poppies may be attempted, though all of the latter are subject to variation.

Sow the Sweet Peas as early as is humanly possible, and in a trench. The Asters should be started in February or March and transplanted to the open ground when the weather is warm. Plants may easily be bought if an early start was not made. The other seeds are sown out of doors in May. If the summer happens to be a dry one, or the soil is shallow, the Sweet Peas and Poppies will be decidedly

weary by the end of July; but the season can be prolonged by sowing a second row of Poppy seeds in front of the first in early July, and by choosing late varieties of Asters and Cosmos.

IV. THE PERENNIAL BORDER FROM SEED

INDEX		DISTANCE APART	COST
SPRING			
1	Arabis alpina, Rock Cress, white, 6"	9"	\$.10
2	Bellis perennis, English Daisy, pink and white, 6"	6"	.10
	Myosotis alpestris Victoria, early Forget-me-not	8"-12"	.10
	Myosotis palustris semperflorens, everblooming	8"-12"	.10
3	Narcissus, mixed yellow, long and short cup cost from \$1.25 per hundred		
4	Darwin or May-flowering Tulips, mixed cost from \$1.25 per hundred		
SUMMER			
* 5	Dianthus barbatus, Newport Pink, salmon pink Sweet William, 18" (June and July)	8"	.15
* 6	Delphinium hybrids, Larkspur, light and dark blue, 4'-5' (July)	2'	.15
7	Althaea rosea, Hollyhocks, salmon and yellow shades, 5'-6' (July-Aug.)	18"	.15
* 8	Asclepias tuberosa, Orange Butterfly Weed, 2' (July-Aug.)	12"	.10
* 9	Platycodon grandiflorum, Balloon Flower, deep porcelain blue, 3' (July-Aug.)	12"	.05
10	Chrysanthemum maximum laciniatum Lace-petalled Shasta Daisy, white, 2' (July-Aug.)	18"	.15
* 11	Gypsophila paniculata, Baby's Breath, misty grayish white, 3' (July-Aug.)	18"	.05
AUTUMN			
12	Helenium autumnale Riverton Gem, Bronze Sneezewort, old gold turning to wallflower red, 4'-6' (Aug.-Sept.)	18"	.15
13	Boltonia asteroides, False Chamomile, white, 6' (Sept.-Oct.)	18"	.10

* Note: These plants will flower the first year if sown early.

III. Getting Result in Poor Soil

IF YOU have one of these brickbat and cinder backyards the third plan is warranted to succeed. The architectural form of these plants is particularly good. Note the contrast between the tall, striking stems of the Plume-poppy and Sunflowers, the symmetrical form of the Summer Cypress, the clinging vine on the fence, the flat mass of Portulaca and the irregular intermediate masses of Spider-plant. The color effect is a delicate one—creamy white and yellow, relieved by one mass of deep blue Cornflowers. In the fall when the leaves and the seed pods of the Plume-poppy turn to bronze, and the Kochia to dull red another phase of interest will be seen.

Should you wish to try other things, collect some of the lovely skyblue Chicory to put with the Spider-plant, and arrange some orange Butterfly-weed in front of the Cornflowers.

All these seeds may be sown in the open ground. Bocconia is a perennial which flowers the first year and spreads very rapidly from the roots. In fact, if not kept back, it is liable to become troublesome.

V. THE USEFUL BORDER

III. THE BORDER FOR POOR SOIL

INDEX		HEIGHT	DISTANCE APART	COST
1	Bocconia cordata Plume Poppy, perennial, white, July-Aug.	6'-8'	12"	2 pkts. \$.10
2	Annual Sunflowers Single miniature mixed	4'-6'	12"	1 pkt. .10
3	Kochia trichophylla Summer Cypress	2'-3'	2'	1 pkt. .05
4	Echinocystis lobata Wild Cucumber Vine	20'-30'	3'	1 pkt. .05
5	Cleome gigantea alba Spider Plant, clusters of white flowers and long pods giving it a spider-like appearance	3½'	18"	.10
6	Centaurea cyanus Bachelor's Buttons, deep blue	2'-3'	6"	1 pkt. .05
7	Portulaca Sun Plant, single yellow and white	4"-6"	4"	2 pkts. .20
				.65

INDEX		DISTANCE APART	COST
HARDY			
1	Rhubarb, 3 plants, or seeds (.05)	2'	\$.75
2	Asparagus, 24 plants, or seeds (.05)	12"	.40
3	Horse-radish, 6 plants	12"	.10
4	Peppermint or spearmint, 1 plant		.10
5	Sage, seeds	2'	.05
6	Thyme, seed	12"	.10
ANNUAL			
7	Chives, 1 plant		.10
8	Small fruited tomatoes, 12 plants or seeds (.15)	1½'	.50
9	Peppers, 12 plants	12"	.30
10	Scarlet Runner beans, seeds	12"	.05
11	Parsley, seeds (biennial)	3'-6"	.05
12	Radish, seed	2'-2"	.05
13	Carrots, seeds	8"-3"	.10
14	New Zealand spinach, seed	8"	.10
15	Calendulas, pot marigolds, seed		\$.25

IV Perennials for Permanency

TO KEEP in spiritual alignment with the exigencies of the times, if you want a perennial border, you should yourself start it from seed. This would mean that the old favorites the Iris, the Peony, the Lily and the Phlox are not for you, so probably there will be an adjustment of theories to practical needs! But a continuous and effective display can be secured from the accompanying list. All of them are easy to grow and have a long blooming season. If the seed is sown early many of them will blossom the first year.

In May, as soon as the ground is sufficiently warm, sow the seeds where they are to appear permanently, and as soon as the plants are large enough transplant them to proper distances. Exceptions to this rule are the Hollyhocks which should be sown in August to assure bloom the following year; and if you sow the English Daisies, Forgetmenots and Arabis in frames or in the reserve garden, they will not resent being transplanted to their permanent positions in the spring. This will enable you to sow in their stead Sweet Alyssum and Calendulas for bloom the first year. Poppies, which are over in July, can be sown in the place of the Hollyhocks. The advantage that accrues from moving those three plants in the spring is that they serve as a carpet of small bloom. Surplus plants can be used to fill in gaps which show in the bed. As the larger perennials grow they will soon eclipse these smaller plants, whose chief value lies in their early spring effect.

V. For the Ultra Patriot

WHEN space is limited and your patriotism so intense that, in duty bound, you feel you ought to devote every inch to useful plants try the fifth plan. Despite its utilitarian character, it works out interestingly, and in effect is really beautiful. The large leaves and the white blossoms of the rhubarb, and the feathery asparagus, though planted mainly for their decorative qualities

in early spring, before anything else is ready, will be appreciated on the dining table.

The permanent plants and herbs are grouped at the ends of the border where they need not be disturbed when the bed is being spaded. On the fence the scarlet runner beans are both effective and edible, and the tomatoes are suggestive of the love apples, as they were so-called in old-fashioned gardens. These small ones are excellent either as a salad or preserved, and come in a variety of forms: pear, plum and

cherry, and in color both red and yellow.

One strong color note must be introduced. Calendulas serve this purpose appropriately—though in modern times it stretches the point to call them useful for flavoring soups. These are set off by the gray green sage, and the silvery green of the splendid New Zealand spinach, a variety that can be picked until frost. The decorative qualities of parsley and carrots as an edging all will admit. The radishes at the back may be allowed to flower, or they can be pulled and replaced by gray-green late cabbages, or the taller Brussels sprouts. If so many peppers prove too great a concession to beauty, try the more prosaic beets, whose tops and roots are alike edible; or Swiss chard.

If you have a bird, plant some Sunflowers whose seeds it will enjoy. Cucumbers might share the fence with the tomatoes, or if you go away, in late summer plant early peas if the exposure is a sunny one.

This border is not intended to take the place of the more ample vegetable plot, but to supplement it in an interesting manner. A younger member of the family might take charge of it with profit. Seeds or plants are set out as designated, but to save expense, rhubarb and asparagus may be raised from seed, though to do so takes two years; and peppers and tomatoes started indoors in boxes.

Counting the Cost

THE COST of the seeds suggested in the tables is of course an approximation, because the size and price of the packets differ so, it would be impossible to quote with any degree of exactness.

If, this summer, flowers will go a long way in gratifying the spiritual craving for expression that is sure to be in evidence, the raising of vegetables will, to countless thousands who could not help in any other way, create in their hearts the feeling that they are doing their "bit," and at the call delve in the fecund soil; for deep down in all of us slumbers the age-old love of the earth.



Shrubs That Keep Their Foliage Late W. H. JUDD

MANY of those deciduous leaved shrubs which retain their foliage in a state of fairly good perfection much later than the majority are worthy of being made a note of and more generally planted as they considerably help to shorten the long and dreary months of winter. It was during the third week of November that these random notes were made in the Arnold Arboretum.

Foremost among them is *Evonymus Hamiltonianus* variety *semipersistens*. This forms a small, much branched, erect growing tree about 15 ft. high and almost as broad; although not known in a wild state it is presumed to be of Chinese origin. The foliage is retained later than those of any other shrub, usually remaining on in a fairly good condition until close on Christmas, and the leaves do not change color before falling off. This year the tree has fruited very freely, but these are small and unattractive. *Ligustrum Prattii* retains its leaves quite late, which are narrow, of a deep green and glossy appearance, and a very suitable plant for situations south of us as the young growths are often killed back during the winter.

By far the most attractive plant at the

Arboretum last fall was *Ligustrum vulgare* var. *foliosum*. This variety is more spreading in habit than the type and the foliage is narrower and more dense, and the whole shrub far more freely fruited. The fruits are produced in large, dense terminal clusters of a shiny black color, and these are left alone by the birds. The foliage is held on perfectly green much later than the familiar *Ligustrum vulgare*, and is a plant to be highly recommended, especially for planting on the borders of woodlands, and can be freely propagated from cuttings. The common *Ligustrum ovalifolium* may be included in these notes but is too well known to call for further description.

Forsythia europaea is a tall upright growing shrub, here about 12 ft. tall and keeps its foliage later than any of the other well known varieties, but like those, eventually turns yellow before falling off. The "Wayfaring Tree" of Europe, *Viburnum Lantana*, grows also to a large size and has foliage densely tomentose below and is now of a deep reddish brown color on the upper side. A geographical representative of the former is *Viburnum ciliatifolium*, but being of a more delicate nature does not assume the same habit. The

foliage is very similar to the above, and its prominent terminal flower buds are likewise formed during the fall. On the tall growing *Viburnum Sieboldii* the older leaves have turned a rusty brown but the later formed ones at the apex of the branches are still deep green and glossy. *Viburnum Opulus nana* is a plant seldom seen, and a very suitable subject for the border of a shrubbery or for a rockery. It grows about three feet tall, upright growing and very densely branched and keeps its foliage very late into the fall, later than any of the *Opulus* section, and gradually changes to a brown color.

Lonicera Xylosteum kept its foliage a good green till just about the middle of November, after which it turned yellow and fell off within a few days. *Lonicera fragrantissima* is not a very reliable subject here and needs more the climate of Long Island to be a success. The foliage is oval and of a pale green color and retained very late, but where quite at home is almost evergreen. These remarks also apply to *Lonicera Standishii*.

Cytisus scoparius Andreanus compactus is a dwarf form of the well known variety, having the same colored flowers and being



Abelia flowers over a long period as well as carrying its foliage quite late in the season. It makes a handsome specimen shrub

more hardy. The upright growing branches are very dense and about four feet high, the stems and foliage are both of a deep green color. *Cytisus capitatus* retains its soft pale green foliage also quite late in the season and fails to change color before falling.

In a sheltered position *Abelia grandiflora* is a delightful plant, it is a small shrub of a slender spreading habit remaining in flower for several weeks during September and October, and the small foliage of a deep shining green keeps on the bushes till late in the year.

For a rockery *Hypericum Buckleyi* is a gem. This is a low-growing shrub, about eighteen inches high, of a spreading nature and with erect branches, each one of which is terminated with small yellow flowers during the summer, making a clump look like a bed of gold. The foliage is small, stays on very late and is now of a gray green color.

Berberis Wilsoniae is becoming fairly well

known now and is also a suitable plant for a rockery, being a small bush with spreading and arching branches. The foliage is small, produced in great abundance and of a gray-green color, of a semi-evergreen nature, this turns to a lovely reddish-brown before falling off. The fruit is small, round, and of a bright salmon red color. Very similar to the above and answering practically the same description is *Berberis Wilsoniae* var. *Stappiana*. The thorns as with the preceding are sharp and needle-like and longer than the foliage.

Berberis aggregata is a tall erect branched shrub about 5 ft. high, with small foliage remotely serrate toward the apex, turning to a pleasing reddish-brown in the fall, and is



Clematis paniculata, a vigorous climber, thrives best in sunny situations. Will stand severe pruning in winter



Evonymus Hamiltonianus semiperistens, a small shrub which retains its leaves nearly till Christmas. The fruits while numerous are not decorative

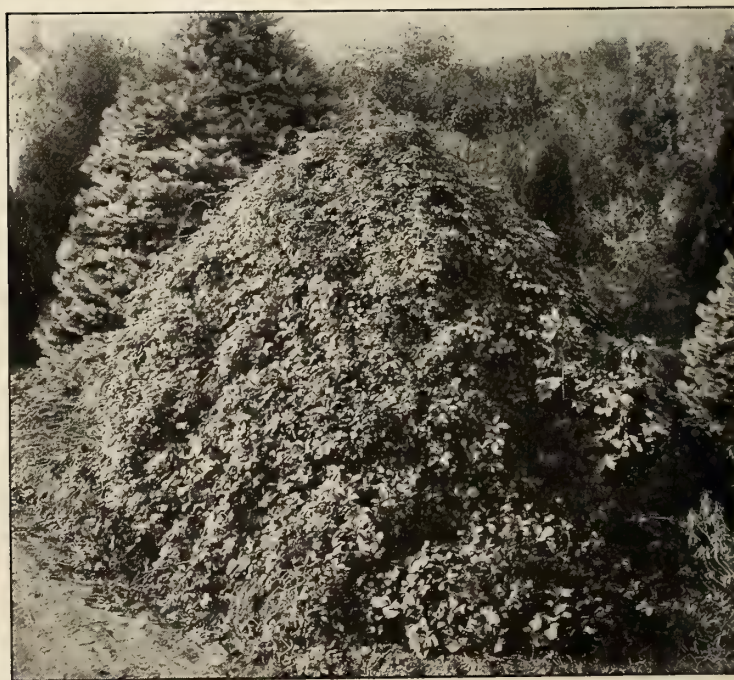
held on very late in the year. This flowers the same time as the previous variety and has very similar flowers.

Among climbers the well known *Akebia quinata* needs no describing. This plant fruits here every year, and this year two fruits were found on one fruit stalk. *Akebia lobata*, which has its leaves in threes, should be more generally seen on arbors and trellises. The native *Smilax hispida* is suitable for the same purpose and retains its foliage very late.

Clematis paniculata is common to everybody, but *Clematis dioscoraeifolia* is well worthy of being more known. In many respects it resembles the former but the foliage is thicker. The flowers are pure white and fragrant and the sepals are broader than those in *C. paniculata*, and it makes a good succession to that variety as it does not open its flowers till those of the former have passed away.



Dwarf form of the popular Cranberry Bush shares with the type many splendid qualities. The foliage becomes richly colored in the late season



This vine, *Akebia quinata*, is well known, and is usually trained over a trellis. The suggestion here conveyed will also fit other vines

What's New in Roses, Shrubs, Summer Flower-Roots and Plants

A Review of the Trade's Offerings this Season, by the Editorial Staff

A survey of the new offerings in seeds, embracing both flowers and vegetables, was presented in last month's issue of THE GARDEN MAGAZINE. This chapter handles plants only.

NOVELTIES! At once the lure, the delight, and often despair of the gardener—the real enthusiast! It is only by reaching out into the untried that progress is finally made. All the much-vaunted old-fashioned favorites were once new and untried, and so we keep on trying, keeping, or discarding according to circumstances or climate, requirement, or perhaps personal fad and fancy. There is in fact no ultimate rule by which to adjudge other than the test of public trial under various conditions. The trade annually exerts its energies in trying to satisfy the desire of its patrons, and, after measuring up the qualifications of each claimant for notice on general grounds, ventures to offer the results of such selection to the discriminating public.

Naturally in this period of materialistic tendency the output of purely ornamental novelties has a lull—nothing comes from France or Belgium, nor from the Teutonic empire. Yet the British trade (especially as it is represented in the Rose industry) is as active as ever and the Australians send their new Chrysanthemums. Probably the real dearth of new things from abroad is yet to be experienced, because many introductions of this season, for instance, took origin two or more years back—some very many years more. The final result must be an intensified activity in exploiting the things that are already in the country for study, and also in stimulating plant breeding among ourselves.

The nursery trade is laboring under exceptional handicaps in the matter of labor. The stocks in the nurseries are alive and growing and shortage of labor is being keenly felt, but by close application the trade confidently anticipates being able to keep agoing until times become settled again.

The New Roses

THE most widely heralded novelty of the year among "florists' flowers" is the American-raised H. T. Rose *Columbia* with which the flower show visiting public was made familiar last fall. It is another gift of E. G. Hill, a steady worker in Rose breeding and a firm believer in the policy of American-raised Roses for the American-cut flower market. Of course, it has its garden possibilities too, and a new Rose of its unusual coloring is sure of a welcome. It is described as "a peach-blow pink" seedling of *Ophelia*. One of the particular points in its favor is said to be immunity from mildew. Have we achieved the impossible?

From across the ocean, of course, comes a galaxy of Rose novelties. The productions of Dickson & Son, Hugh Dickson, and McGredy are being distributed by their respective agents over here. *Golden Emblem* (Dreer, Totty) of the last-named raiser was seen at the big Philadelphia Rose Show and earned high encomiums. This golden yellow H. T. is offered as an improvement in Rayon d'Or and has won high honors including the gold medal of the National Rose Society in England as well as the 1917 silver medal of the American Rose Society.

Other hybrid teas are: *Marchioness of Ormond*, blush white

with deep pink centre; very large; good exhibition type. *T. F. Crozier*, large blooms; clear canary yellow; of refined form. *H. P. Pinkerton*, intense brilliant scarlet, flamed; mildew-proof; very clean grower. *Blushing Bride*, clear white with faint flushed centre; large well-shaped buds. *Ulster Volunteer*, single, cherry-red with white zone; good bedding Rose. All these are Dickson-Totty Roses. Additional Roses from Dickson & Sons, as introduced by Dreer are: *Mrs. Fred Seal*, a large globular fawn shell-pink, the reflex of the petals a warm silvery-carmine; free-flowering; strongly scented. *Molly Bligh*, a deep madder-pink heavily zoned orange-madder at the base of the petals. *C. V. Haworth*, with shell-shaped massive petals of an intense black-scarlet with rich crimson pile. McGredy, besides the leader already mentioned, sends us, through Dreer: *Mrs. C. E. Shea*, madder-red, shot with glowing scarlet, the outer petals a deep rose shading on an orange base. *Gladys Holland*, buff shaded orange-yellow, outside of petals pearly peach; very free flowering; awarded Gold Medal National Rose Society of England.

As perhaps the best of Hugh Dickson's new creations of the year Dreer describes *H. D. M. Barton* a crimson garden and bedding Rose of the General MacArthur type, which was awarded the Gold Medal of the Irish Rose Society. Other sorts from the same source are: *Ethel Dickson*, described as a great improvement of ever-popular *Mme. Abel Chatenay*, of deep salmon-rose color, while *Golden Spray*, a "clear Maréchal Niel yellow," with almost single flowers has the distinction of being awarded the Gold Medal of the National Rose Society of England.

An improved *Ophelia* is offered by F. R. Pierson under the name of *Rosalind*, the bright coral buds of which change to apricot-pink and open shell-pink with at least one third more petals than the old form. *Silvia*, from the same source, is described as a "yellow *Ophelia*," with sulphur-yellow buds and waxy-white open flowers. *Evelyn*, a sport of *Ophelia*, has more pronounced color, and more petals, which would suggest its better fitting the open garden. (A. N. Pierson.)

A new Climbing Rose *Alida Lovett*, said not to have a single defect, besides being mildew-proof, is introduced by Lovett. This is a Van Fleet product by crossing President Carnot with *Rosa Wichuraiana*, shell-pink with sulphur shadings at base of petals. Strong, long stems and pronounced fragrance are claimed in its favor. Among the good things "to come another year" Lovett promises another climber, a double form of *Hiawatha*, which will unquestionably be welcomed by admirers of that variety.

The ubiquitous Dorothy Perkins, continuing to run true to form, has given us another sport, *Elizabeth Zeigler*. This time deep rose-pink; very effective for trellis work; the plant is as vigorous as its parent and cannot fail to be a welcome addition to our climbing varieties. It has been awarded the Silver Medal of the American Rose Society. (A. N. Pierson.)

An additional, large-flowered *Wichuraiana* hybrid is *Aunt Harriet*, an offspring of *Apolline*, introduced by Conard & Jones. The name of its breeder—Dr. Van Fleet—guarantees, in a measure, the character of this scarlet-crimson Rambler. The white centres of the flowers are strongly emphasized by golden-yellow anthers.

The last claimant among the Rambler Roses, but by no means the least attractive, is *Rosière*. A most charming variation of *Tausendschon*, from which it is a sport and indeed a counterpart, except that the color is superior, deeper, and richer. (A. N. Pierson.)

Among the Chrysanthemums

THE introduction of the sensational "Tokio Set" of Japanese Chrysanthemums, as imported from Japan by Totty, is, perhaps, the most notable event in this group. Varying in form from popularly grown types of these flowers, the following set claims the attention of planters in search of the utterly different:

Benten (Goddess of Beauty)—Green gold with blood-red tips. *Amaterasu* (Sun Goddess)—Yellow, almost like a cactus Dahlia. *Bishamon* (God of Glory)—Dark velvety crimson with bronze reverse. *Fuji* (The Wisteria)—Pale lavender, largest of the set. *Tachibana* (The Orange)—Pale yellow, like a mass of cornsilk. *Daikoku* (God of Wealth)—Pink and pale green; very attractive.

To make things still more interesting for the commercial grower of Chrysanthemums, who already finds difficulty in selecting from many good sorts available, Elmer D. Smith records the perfecting of:

Midnight Sun, said to be the deepest yellow yet produced. Incurved form, medium dwarf habit, maturing first week of November. The same firm has *Betty Ross*, a good new white of incurved form and capable of producing several good blooms to the plant, maturing first week of November; and *Liberty Bond*, an improvement upon *Oconto*, maturing October 24th and producing double flowers from late buds, white with a tinge of cream.

Bronze Unaka (Fengar)—bronze sport of *Unaka*; earliest bronze in bloom, and *Yellow Advance* (W. A. Rose)—yellow sport of Smith's *Advance*, blooming earlier than most others.

As compared with former years, the newcomers to the exhibition class are few. However, the number of contributing sources is greater than usual, showing that the interest in the exhibition type is not on the wane. *Mrs. H. S. Firestone*, a Pockett-Totty novelty, is pronounced by experts to be the one real surprise in this class. A pinkish chamois-buff gives it at least the distinction of unique color.

Other exhibition types for which more or less strong claims of superiority are made are:

Aduana, a large, reflexed pink of exceptional dwarf growth; maturing October 25th.—*Naponee*, an irregular incurved Japanese of the largest size; color creamy white tinged pink. *November Glow*, an incurved Golden Bronze; considered an improvement upon *Calumet*, with a stronger stem. *Purple King*, the nearest approach to purple; of the largest size, surpassing *Reginald Vallis* and *Mankato*, the two best among the *Amaranths*. (All from Smith.)

Joan of Arc, reflexed, pure white in color (H. Nonin, and Totty). *Mrs. W. Dennis*, largest pink to date; superior to *Mrs. Gibson* (Wells and Totty). *Mrs. J. Willis Buhl*, large crimson (Wells and Totty). *Mrs. Frank Traendly*, pearl-pink; resembles *Joan Stratton* (Totty). *Reflexed Louisa Pickett* (Exhibition), reflexed form of *Louisa Pickett* (Totty).

The ever-practical possibility of growing singles just as successfully in the garden as under glass begets for this group an ever-increasing host of friends:

Supreme—Glowing crimson; very large flowers. A most popular type (Wells and Totty). *Portia*—Salmon-bronze, shading to bright flame (Wells). *Bronze Buckingham*—Cheerful glowing bronze; extra fine (Fengar and Totty). *Beatrice*—Brilliant old gold with glossy foliage (Godfrey and Totty). *Ida Catherine Skiff*—Brilliant bronzy amber; improved *Yvonne* (Totty). *Louis Spears*—Chestnut-crimson; very strong grower (Godfrey and Totty). *Fernridge*—Terra-cotta with gold zone in centre (Bergen and Totty). *Josephine Schlotman*—Lilac with white zone in centre (Totty). *Bertha Fairis*—Exquisite Rose-pink; early kind (Wells and Totty). *Mrs. Max Behr*—Shiny Chestnut-scarlet; dwarf grower (Godfrey and Totty). *Artes*—Velvety crimson; very large size (Gaut and Totty). *Artemis*—Sunlight yellow; a charming variety. (Gaut and Totty). *Chloris*—Terra-cotta bronze, tipped flame (Gaut and Totty). *Helios*—Bronzy scarlet, flecked with yellow (Gaut and Totty). *Dainty*—Seedling from *Indicum*; pale rose-pink (W. H. Waite). *Mrs. W. H. Waite*—Enchantress pink; cactus-shaped flower (W. H. Waite). *Elizabeth Firestone*—Rose-pink, underlaid with a silver sheen; free flowering; vigorous growth. (A. N. Pierson.) *Connie Knoble* (Hardy Pompon)—Clear glowing yellow (Totty). *Lacille Knoble* (Pompon)—Bronze-yellow, with well-formed budded flowers opening about November 10th. An addition to the Mt. Greenwood set.

New Gladiolus Types

CONTINUED progress in new color combinations keeps popular interest in Gladiolus on the alert as the opportunity of choice in satisfying individual taste increases rapidly—perhaps more so than in any other flower with the probable exception of the Dahlia. Besides a wonderful new race of giant-flowering kinds being nursed to perfection on the Pacific Coast, eastern hybridizers give us *Praecox* hybrids, *Primulinus* hybrids, *Kunderdi* hybrids, "ruffled" types, and what not. The outstanding feature in the majority of new hybrids is the endeavor of the breeder to perfect



HYBRID PEONY DAHLIA LA FOLIE, attractive through its oddity. The color is a peculiar blending of orange and salmon. (Mastick-Tyler)



HYBRID CACTUS DAHLIA PROF. F. H. HALL. White ground, overlaid and suffused with shaded rose. (Mastick-Tyler)

both form and color at the same time. The effort of striving after refined colors, such as are found among the Orchid-flowering Pansies and the rarer Primroses is particularly noticeable in the *Fordhook Praecox* Hybrids which are now available in a great range of separate colors (Burpee). Many of Mrs. Austin's friends will be interested to learn that in *Pink Lustre* she offers what she considers the crowning masterpiece of her efforts, a shell-pink with a pure white throat, not mottled or streaked in any way, overlaid with an almost sparkling lustre.

Honoring the great British soldier, Vaughan introduces



ZONAL GERANIUM FLORADALE STRAIN, of which this is a representative, is of Californian origin, and is offered in many variations. (Burpee)



"TOKIO SET" of Japanese Chrysanthemums imported from the Celestial Empire and is sufficiently different from conventional forms to attract the curious. (Totty)



DAHLIA TOPAZE (Exhibition Cactus). A fine type of European origin is seen in Topaze, a peculiar bluish rose color described as "almost weird." (Tate)



TRAILING ROSE ALIDA LOVETT, for which much is claimed. Produced by crossing President Carnot with Rosa wichuraiana. Said to have pronounced fragrance and to be mildew proof. Color shell pink, with sulphur shadings. (Lovett)



BOX-BARBERRY is the curious name for a dwarf compact form of Japan Barberry, evidently applied because of the suggested utility of the newcomer as an edging plant. Normal type to right; the new form to the left. (Elm City Nurseries)

a light salmon-pink *Gladiolus* with oxblood-red blotches in *Field Marshal Haig*. Besides having the decidedly fashionable ruffled petals, this sort is said to do particularly well in cool, moist soil.

By crossing *Gladiolus quartianus* with one of the new Kunderdi hybrids, A. E. Kunderd originated what he chooses to call the fore-runner of an entirely new, late-flowering race of *Gladiolus*. *Indian Summer* is a rose-pink of large size, blooming in late fall. He also has:

Marie Kunderd, a ruffled white, comparing very favorably with Chicago White and Snow White in earliness; has almost invisible slight pink line on centre of lower petals. *Anthony B. Kunderd*, of large flowered, intensely ruffled type. Color deep cream, blush and primrose tints, blending. *Gold Drop* (Kunderdi-Primulinus hybrid). Exceptionally large for a Primulinus hybrid. Yellow, with slight pink throat lines.



GLADIOLUS PRAECOX HYBRIDS which make a strong appeal because of their early blooming from seed. Now also offered in selected bulbs. (Burpee)



Pernetiana Hybrid ROSE GOLDEN EMBLEM, is here shown in two characters. This novelty was probably the most remarkable in the big Philadelphia Rose Show last year. An improvement on Rayon d'Or and claims attention as a possible triumphant yellow garden Rose. (Dreer, Totty)



ROSE AUNT HARRIET, semi-single Wichuraiana Hybrid, produced by Dr. Van Fleet from Appoline. Scarlet crimson, with white centre. (Conard & Jones)



GLADIOLUS INDIAN SUMMER. Submitted as the start of a new late flowering race. It has somewhat ruffled flowers. Color rose pink. (Kunderd)



H. T. ROSE SILVIA described as a yellow Ophelia, becoming white with age, has attracted favorable comment for cut flowers. (F. R. Pierson)



H. T. ROSE COLUMBIA is appropriately named because of its American origin. Pure pink becoming deeper with age. Raised by E. G. Hill. (All Rose specialists)



H. T. ROSE ROSALIND, an improved Ophelia. Bright coral in bud becoming apricot pink. A fuller flower than the type. (F. R. Pierson)

When it Comes to Dahlias

THERE is an apparent dearth of novelties in this flower of many vagaries, and which has so many sincere devotees. Perhaps the peculiar conditions of the times cause many to be over-conservative in talking about new things. Be that as it may, the only hybridizer reporting progress is C. S. Mastic, to whose activity reference was made in these columns last year. Through Tyler he is distributing more of his bizarre and fantastic creations. Among them are:

Miladi (Hybrid Peony)—Chinese vermillion; shape of a Water Lily with several rows of narrow pointed petals; a row of small petals curl over centre; very fragrant; size 7 to 9 inches. *La Folie* (Hybrid Peony)—Large folded, twisted petals; color a peculiar blending of orange and salmon giving flower a flame color appearance; good stem; size 9

inches. *Isabel Stord* (Hybrid Decorative)—Crinkley petals, twisted at ends to point. Color lemon yellow, strong stems. Photo 1 natural size. *Heather Brae* (Hybrid Cactus)—Pale terra cotta lightening to fawn at tips, deeper in centre; 7 to 8 inches. *Maharajah* (Hybrid Decorative)—Long curling petals, blooms average 8 to 9 inches; color, dregs of wine, lightening to burgundy at tips. *Prof. F. H. Hall* (Hybrid Cactus)—Ground work white, overlaid and suffused with rose from the lightest to the deepest shade; light reverse showing in tips of curled twisted tubular petals, full to centre. *Sister Theresa* (Decorative)—Color sulphur white shaded to pale green in centre; dwarf grower.

A few new English Exhibition Cactus Dahlias are available in:

Phenomenal, with flowers 8 to 9 inches across, very much incurved twisting and curling in a tangled way; color pale salmon with a golden glow. *Topaze*, a large, broad and deep flower. Color a peculiar bluish rose; "the English describe it as almost weird." *Patriot*, very dark scarlet; bush dwarf and branchy; stems long and strong, holding flowers up facing. (Tate.)

Newcomers Among Cannas

IT WOULD seem that this showy bedder is finding a receptive public if the number of novelites be any index. While appreciating that Cannas are popular bedding plants because of their massive, compact growth, it is ever the desire of the breeder to get the flowers away from and above the foliage. Thus we find Dreer introduces *Carmine Beauty* with the specific claim that "its deep, carmine flowers are freely produced high above the heavy, dark green foliage" which is narrowly margined red. Others noted from the same source are:

Cheerfulness, with fire-red or deep orange flowers, appear with golden border and centre, each petal flaked carmine-crimson; 3½ ft. *Cloth of Gold*, a compact-growing, free-flowering golden yellow; 3 ft. *Dazzler*, clusters of deep fire-red flowers coupled with compact habit of plant; adapted for bedding purposes; 3½ ft. *Golden Eagle*, intense golden-yellow; upright grower with large flower clusters well above the foliage; 4½ ft. *Harmony*, Geranium-red flowers in clusters and substantial trusses; carmine-bronze foliage; 3½ ft. *Poppy*, intense Poppy-red; florets in good trusses over greenish-bronzy foliage; 5 ft. *Salmon Queen*, rosy-salmon scarlet, blending to a rosy-carmine toward the centre; substantial flowers are carried well above heavy green foliage; 5 ft. *Superb*, bright orange-scarlet blossoms and glaucous-bronzy foliage; 5 ft. *Sensation*, pale rose; foliage glaucous-green; the plant dwarf and compact; 3 ft.

The house of Burpee comes to the front with *Fiery Cross*, larger than Firebird, of which it is a seedling; enormous heads, of a color almost that of Fiery Cross Sweet Pea.

Other Bedding Plants

AS COLORFUL plants, for spectacular display in summer effects the multi-colored and variously formed Crotons, so-called, have a definite place. They are used as dwarfs and keep up a kaleidoscopic brilliancy of hues through the summer. Several new comers from English sources are offered by Dreer. As bedding plants they are delightfully different from the ordinary and effectively light up corners and places under the shade of trees.

The time honored Zonal Geranium cannot be forgotten—indeed its many, very many merits justify its popularity, yet strangely few people realize the rich assortment of colors offered in modern types. California plantmen are developing new strains and we are offered the *Floradale Strain* with the promise that it holds many surprises in shape of unusually bright foliage effects (Burpee).

A Nineteen Year Old Novelty

AN ILLUMINATING example of how long it takes to get floral novelties ready for general distribution is given by Brand's *New Peony Old Silver Tip*. The seeds from which it developed were sown in the fall of 1899—19 years ago! It first bloomed in

nurseryman reading in part as follows: "I have, for instance, a number of Wilson's (Chinese) shrubs which are not offered yet. I do not think I have tested them long enough to warrant including them in your review. I am extremely careful not to mention anything about which there is any doubt, especially regarding hardiness in this climate, as I think it highly important that people should be given the facts." It is a pleasure to record this conservative attitude of this responsible nurseryman, for the letter is but typical. The nurseryman is often blamed for what he does not do and more rarely is not credited for what he does in experiment and research.

The Elm City Nurseries have devoted more than sixteen years to properly testing, studying, fixing and propagating an entirely new form of Japanese Barberry which differs from the universally known typical B. Thunbergii of being of distinctly compact growing, upright shape, with foliage of a more dainty character. The new *Box-Barberry*, as it is called, will hardly fail of marked appreciation as soon as sufficient stock becomes available for broad distribution.

Satisfactory progress is reported from Mt. Desert Nurseries in the testing of many additional novelties first brought to this country by Mr. E. H. Wilson from Western China. Among those which the past season have proven of broad, general adaptability are:

Meconopsis integrifolia—Yellow flowers; should be grown in a shady position. (The story of the flowering of this plant was told in THE GARDEN MAGAZINE for November, 1917.) *Meconopsis Wallichii*—Pale blue flowers on stems three feet tall; of easy culture. *Astilbe Salland*—A six foot tall variety of great beauty; immense plumes of reddish flowers and foliage. *Spiraea Veitchii*—Of much value for American Gardens and may become equally as important as *Berberis Thunbergii* or *Spiraea Van Houttei*. *Berberis diaphana*—Medium height; bushy nature of growth; attractive green leaves, turning scarlet in autumn. Fruit coming in autumn is rather larger than *Berberis* most commonly used; scarlet color. *Enkianthus perulatus*—Deciduous shrub of slow growth; dislikes limestone soil; develops into a bush shrub of medium height. Valued for its flowers which appear in drooping umbels in May. *Viburnum Wrightii*—A tall growing shrub preferring well drained soil. Large single white flowers; numerous clusters of brilliant red fruit in fall. *Viburnum tomentosum* var. *rotundifolium*—A large growing rather closely branched shrub presenting much the same appearance as the parent form, but leaves are broader, almost round. Blooms about two weeks earlier than *tomentosum* and the autumn coloring is more brilliant. *Pyrus (Malus) zumi*—Never flowered here but Prof. Sargent says it is one of the handsomest of the Asiatic Crabs. *Lonicera multiflora*—Upright growth, with good dark green foliage; vigorous grower and of easy culture; yellow fruit.

Calluna vulgaris var. *Searlii* (Moon) is a Scotch Heather of rather erect nature of growth and more hardy than some kinds that have been better known; has attractive light pink flowers.

Another claimant for attention in the garden border is the reputed bigeneric hybrid *Clematiquila* (Wolcott) which though not absolutely new, having been offered in the English trade these many years, merits mention because of the interest attached to the claims of its supposed origin—a hybrid between a Clematis and a Columbine. It is in fact, however, a spurless variation of an Aquilegia.



Connie Dick, hardy Pompon, color yellow. (Totty)

Beatrice, Single Decorative; old gold. (Godfrey-Totty)

Midnight Sun, Incurved; medium dwarf; very deep yellow. (Smith)



Liberty Bond, Incurved; creamy white. (Smith)

Mrs. W. Dennis, Reflexed Japanese; pink. (Wells-Totty)

Betsy Ross, Incurved; white. (Smith)

Representative new Chrysanthemums



A spurless Columbine, or Aquilegia, around which certain misty legends of origin wrap some degree of charm

1904—5 years later. Since then, it has been under constant observation as to its "behavior." It is now claimed to be "the best silver-edged red in cultivation." Color madder rose, ends of petals distinctly silver tipped.

Flowering Shrubs and Hardy Plants

IN REPLY to one of our letters commenting upon the seeming scarcity of really new plants we are in receipt of a very illuminating reply from a prominent eastern

The Traitor Aphid That Robs Potatoes

EDITH M. PATCH
Maine State Entomologist

Strange Story of the Part that Roses Played in Helping Along Last Year's Trouble

WHEN the slogan, Food Will Win the War, went ringing through the land, in the spring of 1917, *Macrosiphum solanifolii* was innocently sipping Rose sap, and if she had continued that occupation, matters would have been worse for our posies but better for our potatoes. And in spite of her foreign sounding name, she isn't an alien enemy, either. So she must be traitorous, as she is purely American so far as entomological records go, since she was first introduced from Jacksonville, Florida, in May, 1882. At that time she was engaged in feeding on Pepper Vine.

After that, little if any attention was paid to her until about twelve years later, when entomologists "up in Canada" and "down in Maine" began to look about for a name to apply to a beautiful big aphid, sometimes pink, though usually green, that was playing havoc with the potato crop.

To settle doubts, a trip was made from Maine to our National Capital, to see the gentleman who was sponsor for *Macrosiphum solanifolii*. The desired specimen was "probably knocking around the museum somewhere in a vial, dried past recognition," but the informant continued. "If you have a large *Mac. on Solanum*,—that's *solanifolii* all right."

The entomologist returned to Maine and the Aroostook potato fields, the stalks of which looked like the accompanying picture, only mussier and stickier.

Where did the aphid come from? It was evidently migratory, as the potato vines were clean all the spring and the insects took flight from them in the late summer, long before egg-laying time. The second problem was: What are the practical means of killing the pest?

Perhaps the gardener will think these two problems should have been reversed in sequence; and perhaps they should.

Fates favored the farmer. While he waited, minute winged parasites and fungous disease cleared his field of the pink and green insects and so scarce they became that there was not enough material left in Aroostook County for the life-history studies planned.

Incidentally, a few aphid specimens picked off Japanese Rose one Spring, on the Campus of the University of Maine, settled the question

whence came the aphids to the potato and whither they flew. The Rose bush, it chanced was the favorite over-wintering host-plant, in that locality. But after its sensational appearance in Canada and Maine for a few seasons, *Macrosiphum solanifolii* waited until 1917 to get the public really excited.

To be sure, she brought in considerable revenue to Uncle Sam in postage stamps placed over innumerable inquiries such as; "What species is this, as per example in box, that is wilting potato vines to the ground and weakening whole fields in this region?"

"This region," in reality stretched all the way from the Massachusetts coast to the Mississippi and how much farther can probably be ascertained from the government reports a bit later.

But food at present weighs heavier on the

mind than postage stamps and that is why it seems just to term the pink and green potato aphid a traitor of 1917. In fact in Ohio this insect was named "Kaiser bug," which is significant enough.

Of course a State recognizing the pest by such a name could not do other patriotically, than fight it; and thus it is from the Ohio Agricultural Experiment Station (Bulletin 317) that we learn:

FINAL RECOMMENDATIONS

Based upon our observations and findings, confirmed by the general results of the field demonstration spraying campaign, we believe:

Nicotine sulphate, $\frac{1}{2}$ to 2 teaspoonfuls to a gallon of water, or about 1 to 500, with enough soap added to form a suds, is the most satisfactory spraying material for the control of this species.

Two applications or more may be necessary to control the scourge, and these applications under conditions such as prevailed this season should not be more than 3 days apart.

Thoroughness of application is essential to success. Many failures to control are due to insufficient or improper spraying.

Because of the wide range of hosts, clean culture is an important adjunct to other control measures.

Spraying in the early stages of an outbreak is essential to a successful control.

With proper equipment, proper materials and thorough work, the green and pink potato aphid may be effectively and economically controlled.

Although this insect is to be classed with the migratory aphids because it accepts one type of food plant (i.e. the Rose) for over wintering host and another type (by preference the potato) for the summer months it differs from many such aphids in not being exclusively confined to two food plants or their close relatives. On the contrary, the pink and green potato aphid has been collected in different parts of the country from members of sixteen families of plants: certainly a broad and catholic taste as is shown by the following list:

Corn, Iris, Gladiolus, Canna, buckwheat, Curly Dock, Smartweed, Lamb's quarters or Goosefoot, Redroot Pigweed, Pokeberry, Turnip, Shepherd's purse, Apple, Rose, Hollyhock, Plantain, Bean, garden Pea, Pepper, Jimson weed, Matrimony vine, Tomato, Ground Cherry, Eggplant, Pepper Vine, Potato, Sweet potato, Ragweed, Aster, Cineraria, Sunflower, Lettuce, and Sow-thistle.

As to the suggested remedies let it be recognized that the special proprietary aphid sprays and tobacco extracts on the market are convenient vehicles for nicotine sulphate on which they are all based.



Last season's potato fields from the Mississippi to the Atlantic coast were badly attacked by a robber aphid. Whence came it? The accompanying article tells you how to guard this year's crop

Hitting the High Cost of Fertilizers

H. F. BUTTON Soil Specialist Long Island Agricultural School

Applying New Ideas in Soil Fertility so That the Gardener Can Get High Value at Lower Cost—Means at Hand to Supply Needed Potash and Phosphates

TIME was, when whatever was, was right; but the American gardeners of to-day are so far from the ways of their conservative forefathers that they are like the Athenians, mentioned in the scripture, who stood about in the public places and talked of any new thing which might be told by travelers or philosophers.

There is so much to know about soil fertility that, the beginner feels about it as Mark Twain did about learning to be a pilot; that no one could ever learn that amount, or if he did learn it, his head would burst from the excess of knowledge. But like the great Mississippi pilot, we do learn it and then

stand around waiting for a chance to learn about some other new thing.

Put Sulphur to Work!

WE ALL know that sulphur is a necessary element, yet somehow the books say but little about it or its value in fertility. Careful readers will remember the small scientific flurry when some Wisconsin chemist discovered a few years ago that existing methods of analysis had missed a large share of the sulphur. Even after this we heard but little of sulphur until some recent studies were made as to the effect of the raw product on the soil and it was found that when finely di-

vided sulphur was mixed with soil, it disappeared in a few days leaving the soil sour. In other words the bacteria had changed sulphur to sulphuric acid. As sulphuric acid is the most important factor in making phosphate rock soluble, it was a natural suggestion that the gardener might be able to make his own acid phosphate. In compost piles, where bacteria were sure to be active, rock phosphate and flowers of sulphur were mixed and after a few weeks of fermentation it was shown both by growing crops and by chemical analysis that the phosphate had become soluble. Now rock phosphate contains twice as much of phosphorus as does acid phosphate

and costs less than half as much a ton, yet its low availability in eastern soils has prevented its general use east of the Appalachian Mountains.

If this method proves practical we may see each cultivator making his own superphosphate from rock phosphate and sulphur, while the bacteria do the work for nothing and board themselves. While it is too soon to speculate on the practical use of this, yet it seems probable that gardeners may be able to mix in their compost heaps 5 per cent. or every twentieth shovel of finely ground phosphate rock and one shovel in fifty of sulphur with the expectation of producing available phosphate cheaper than it can be bought as superphosphate. At any rate we can hit the high cost of fertilizers a body blow.

Phosphates from Nitrates?

ANOTHER most interesting investigation along a similar line has been in showing that the bacteria which cause nitrification also cause the phosphates to become available. This question has been debated back and forth for many years. We have known in a general way that ground rock phosphate is more useful in soils rich in lime and organic matter, such as are so often found in the corn belt, but that the results have been generally disappointing in the poorer soils of the Atlantic coast. Acting on this knowledge it was often assumed that rock phosphate is soluble because of the presence of organic matter, and numerous attempts were made to make raw rock available by mixing it with manure. The results of mixing rock phosphate with manure have been generally disappointing and often negative, while its application to humus-stocked fields generally gives good returns.

These facts instead of being contradictory, seem to point to a close connection between the dissolving of phosphate and nitrification or the producing of nitrates. Now the production of nitrates does not take place in a manure pile even though decay does, but only when the organic matter is well mixed with soil.

When we stop to think of it, we all remember that nitrification is the result of the activities of three groups of bacteria, one of which produces ammonia, the second turning the ammonia into nitrous acid, and the third changing the nitrous acid to nitric acid and nitrates. In order to test this the three kinds of bacteria were isolated and caused to grow in nutrient solutions with no other kind of bacteria present to complicate results. To each solution a quantity of finely ground insoluble rock phosphate was added to see if it became available. The first kind of bacteria broke down the proteids and formed ammonia, but had no effect on the phosphate. The same was true of the nitrate bacteria. But in the solution where the bacteria lived which transformed the ammonia to nitrous acid, there was a pronounced and steady increase in the amount of soluble phosphate.

This much seems clear; that the solution of rock phosphate is closely connected with the production of nitrates. It follows that if sufficient phosphate is present in the soil any treatment which promotes the formation of nitrates will make available some phosphates. With this in mind we have an added reason for drainage in order that, as the air replaces stagnant water, the bacteria may multiply. If we plant deeply and pulverize the soil we are giving air for the nitrifying germ which will also set free phosphates. If our soil is sour we

add lime not to feed our crops, but that the soil may become wholesome for the friendly bacteria which not only make the insoluble matter into the necessary and easily lost nitrates, but, as a by product of their work, change the insoluble phosphates into a form in which they can be used by plants, yet not be washed away in the drainage waters.

It still remains to be seen whether this process is rapid enough to supply the needed phosphates for a productive garden, but if we keep our soil well stocked with phosphates, lime, and organic matter, whose rapid decay we bring about by drainage and cultivation, we are at the same time making soluble a very appreciable amount of phosphate so much needed by all plants which produce seeds as the useful product.

Getting the "Insoluble" Potash

THE effect of the war in cutting off our supply of potash has distressed many economists and a few farmers, some of whom are even worried by an unofficial German threat to forever "strafe" us by refusing to exchange their potash for our phosphate. For the encouragement of all such, it may be well to recall a recent experiment to show that we are not likely soon to exhaust the supply of potash in our soils.

As we will recall; there is in almost all soils a quantity of "insoluble" potash which, it has been assumed, the plants can not use because it is insoluble in boiling hydrochloric acid. To test this a considerable quantity of soil was boiled with acid, as is done in analysis, after which the residue was washed clean and all acid neutralized. As it was a fine clay, it was mixed with pure quartz sand to loosen it, and all the other elements of plant food, except potash, were added. As the plants matured samples were taken for analysis and the other plants returned to the soil and other seeds sown. At the end of three years it was found that the soil had produced decidedly more crops to the acre than the average of the state. These plants had, on analysis, been able to secure from this "extracted" soil enough potash for normal growth, the amount increasing as more and more of the green crops were returned to the soil. The plants in this experiment grew to normal size and matured sound seed but contained much less than the usual amount of potash, showing a possibility that much of the potash in plants is not necessary but like the silica and chlorine, is merely tolerated. This belief is encouraged by the knowledge that much of the potash remains in the stems of the plants instead of being stored in the seeds like the more precious phosphorus. For example corn has nine times as much phosphorus in the grain as in the stalk and three times as much potash in the stalk as in the grain. The only soils in this country which really lack potash are the white beach sands and the reclaimed muck or peaty soils which are actually deficient in this element.

In corroboration of this it may be recalled that 1917 was the third successive crop of Long Island potatoes to be grown with little or no potash, yet that year's crop was above the average in yield and quality.

ONE good way to prove the fitness of the soil to be dug or plowed is to take a fork or spade, run it into the soil to full depth and turn it over. Take a handful of the soil and squeeze it. If it forms a mud ball, you must wait.

How Long Are Seeds "Good?"

SEED economy is the "order of the day." On our methods of handling available vegetable seed supplies during the next sixty days depends whether or not we will be able to grow the varieties we like best during 1919. Two methods of conserving supplies on hand should be practised by every conscientious gardener: Seeds left over from last year should be tested, and seeds bought this year should be used sparingly—not stingily, but with care.

Remember that, with few exceptions, most vegetable seeds retain their vitality for many years. Some grow better the second year than the first—notably cucumbers and beans. However, in many cases, the seeds bought last year, were already several years old before you got them. Precaution prompts every seedsman to carry a two-year supply of most biennials—vegetables requiring two years from seed to seed.

A Method of Testing Seeds

SUCH seeds as may have been carried over from last season, therefore, should be carefully tested. Take a dozen blotters, wet them thoroughly in warm water and put from ten to twenty-five seeds of each sort between the blotters, putting a number on each blotter facing the seeds and the same number on the package or packet containing the rest of the seeds. Then take a muslin or burlap bag, wrap it several times around the blotters, wet it, too, and put this "ragdoll" on top of the furnace or on a radiator or anywhere where it is subject to uniform heat. Every morning this package should be moistened. At the end of the third or fourth day, the seeds should show signs of germination.

Of the coarser seeds, such as beans, corn, peas, pumpkins and squash, ten seeds are generally sufficient to test vitality. If five sprout your seeds grow about 50 per cent., etc. Seeds that you need not test because their vitality, if bought from a responsible seedsman, is above "suspicion" are beets, cucumbers, lettuce, muskmelons, radish, tomatoes and turnips. They germinate well for from six to ten years.

Seeds that should be tested because their germination power changes rapidly within a comparatively few years are beans, corn, eggplants, watermelons, peas, peppers, pumpkins, parsnips, salsify, spinach, squash and herbs. If you have but little left of parsnips, salsify and herb seed, do not waste any time with it, but instead get a new supply.

Seeds that should be tested because either their germination power deteriorates rapidly after the second year, or because so much depends on prompt germination that failure would spell the loss of that crop for the season, are brussels sprouts, cabbage, carrots, cauliflower, celery, leek, onions and parsley. Onion seed in particular needs watching. Depending on conditions ruling at seed harvest time some lots will lose as much as 50 per cent. vitality between fall of one and spring of the following year. Since the vitality of onion seeds at its best is rarely more than 85 per cent., it can be seen that planting two-year-old onion seeds may prove a gamble.

To summarize: Hang on to what seeds you've got and be saving with those newly bought. Keep all seeds in glass jars or mouse-proof containers, in a dry closet or attic.

How to Pack Plants for Shipping

ONE of the little pleasures of gardening is the giving away of plants. Some one wants this or that, not because it cannot be bought but because of the fact that it carries with it the unpurchaseable quality that we usually call association.

Now and then the plant, or plants, must be sent out of town, either by express or mail. In that case it should be borne in mind that the gift is not complete in the mere giving; the packing must be such as to be an insurance against the plants arriving all dried up. True, some plants will stand a lot of abuse in this way, but that is no excuse for letting your parcel arrive in a condition that will cause the recipient to feel a real pang of disappointment.

It is the custom of nurserymen to ship plants with the roots freed from soil by washing, and wrapping loosely in sphagnum. There is no better way of packing, but the average grower of flowers does not have the moss at hand. The best substitute, at least so far as my experience goes, is to leave a part of the soil in the roots and moisten it slightly. Then wrap the plants—each kind separately—in pieces of newspaper after the manner indicated in the accompanying pictures. Begin with the larger plants and pack so that the heavy ends go against the ends of the box, filling up the hollow between with small plants. Before putting on the cover, dip the hand in a basin of water and sprinkle lightly.

The packing should be fairly tight, as the plants travel better, and for this reason care must be taken that the box is no larger than actually required. A pasteboard box answers well enough for small packages if it is wrapped in stout paper, but wood is better for express packages above the mail limit of four pounds.

This method of wrapping in a bit of newspaper I use commonly when handing a friend a plant to take away from my garden. It keeps the soil in the roots, and the package

is a handy one to carry. A string may be tied lightly around the package to prevent the wrapper from unrolling, but I rarely employ one.

New York City.

H. S. ADAMS.

This Year Plants are as Gold

EVERY plant that you have succeeded in getting from a seed should be made to count to the full of all it is capable of producing. If you have more plants than you can use yourself, see to it that your friends and neighbors have a chance to use them before any are discarded. This applies not only to such plants as you may have started under glass, or in your seed bed, but to the *thinnings from your growing crops*. MAKE EVERY PLANT COUNT!

To really make your seed go as far as it can possibly be made to go, it should be manufactured into *plants* before it is put into the garden! There are two reasons for this; first, it is started under better conditions, (whether under glass or in the "seed-bed" out of doors) and a higher percentage of germination is secured; second, each plant is set out in the garden just where it is wanted, and there are no skips to reduce yields or surplus plants to discard with accompanying waste of seed. The more transplanting you can do this year, the more you will conserve seed, of course—and the *better your garden is likely to be!*

A PINCH of lettuce seed sown under glass, or in a carefully prepared seedbed outside, where the soil can be especially prepared by adding leafmold or humus and watered as frequently as necessary to assure good germination and strong little plants (because there are only a few square feet to take care of), will yield several dozen plants. Planted in the open, in a drill, five to ten times as much seed will be required; the seeds will take longer to germinate, and may be a "failure"; the strongest plants will not be evenly distributed along the row, and nine times out of ten are left overcrowded. Only the best plants will be used in transplanting. The net result is greater returns, with the use of less seed, by transplanting than by sowing in the open.

EVERY plant in its place is gold—but every surplus plant is a weed! Three poor overcrowded plants will not produce as much as one good strong one which has had room to develop perfectly. Thin out your rows as soon as the second or third true leaves are formed on the little seedlings.

But don't waste the thinnings. TO MAKE EVERY PLANT COUNT use these thinnings for transplanting. Give them to a neighbor!

If a little care is taken not to break the main roots off too short in pulling them out (which can be done by loosening the soil about them before taking them out of the row) surplus beets will transplant readily and in two weeks or so look as fine as the plants left in the original row. Cut back the larger leaves of transplants, and trim the roots so that they can be handled conveniently, and plant firmly, without twisting the roots.

EASILY transplanted vegetables are beets, brussels sprouts, cabbage, cauliflower, celery, chard, corn, endive, kohlrabi, leeks, pe-tsai, lettuce, onions, and turnips. Those which

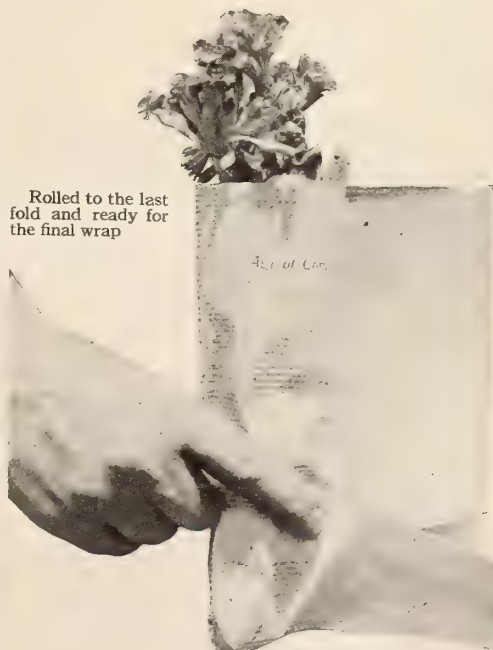
may be transplanted with more difficulty are beans, cucumbers, melons, okra, peas, radish, spinach, and squash. Those which, under ordinary conditions, is not profitable to transplant, either because they will not stand it or because the roots will be spoiled in the process, are carrots, parsnips, pumpkin, salsify, and squash.

Many succession crops that are ordinarily planted in the garden can be started in the seed border, thus not only saving seed but gaining a week or two on the second use of the ground, as the succession crop may be started three to four weeks before the first crop is out of the way. To make a success of this, the border should be prepared as carefully as the flats or frames, are prepared for seed sowing under glass. In very hot weather, a coldframe, that can be given partial shade (with a slat sash, or a frame covered with muslin), will make an ideal place to start seeds when it is difficult to start them in the garden.

Plants of lima beans, melons, etc., which cannot be obtained to advantage by the ordinary methods, may be easily secured by obtaining a supply of paper pots or dirt bands, and starting them in these in rich compost. Plant three weeks or so before it will be perfectly safe to put them outside. If the seed is soaked for about twenty-four hours before being put in the pots, practically every one will germinate.



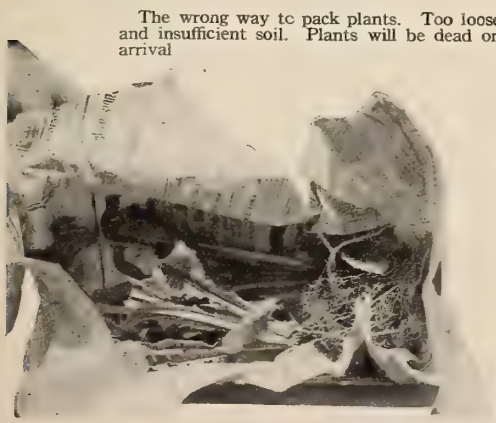
Ready to roll up; showing space to allow for proper folds and right amount of soil



Rolled to the last fold and ready for the final wrap



Properly packed, roots at ends of box, and sufficiently tight to prevent movement and loss of moisture



The wrong way to pack plants. Too loose and insufficient soil. Plants will be dead on arrival

A City's War Garden Activities

BE IT here set down on record that when the call came last year for the intensive production of food by everyone, the Administration of the City of Boston, in the ancient Commonwealth of Massachusetts, rose nobly to the occasion and earned for their city the distinction of being the first municipality to realize the necessity of putting into practical effect the community effort of the governing authorities.



In the demonstration tent competent gardeners were ever ready to give practical demonstrations

The Mayor's appeal, asking citizens to seriously consider the cultivation of small areas about their homes, came in February. That was the beginning. Organized instruction followed. A trained horticulturist was engaged to devote his whole time to a course of instruction to be held at the City greenhouses. Working models of hotbeds, coldframes, propagating beds, were put into operation. A practical demonstration was made in the art of taking cuttings, sowing seed, transplanting. Intensive instruction sounded repellent to some citizens. "Intensive methods," "Efficiency schemes," and such like were overworked phrases and seemed to conjure up forces of skilled technicians and much paraphernalia. Yet a free translation would mean nothing but the ability to get out and hustle. As the movement expanded the Public Safety Committee took over the control of the larger areas and the public planting places, but the City kept its directing hand on the home garden and small plot. The loan of arable land was asked for. Two hundred acres in Franklin Park were plowed up and divided into plots of 5,000 square feet, which were allotted on application at cost of preparation. There were two systems of rental. One paid cash outright and assumed possession of the entire product. The other was to work on shares, surrendering two-fifths of the crop. Free storage was given at harvest time.

An interested resident presented pedigreed cattle for sale by public auction to raise funds, and thus thousands of packages of seed were distributed.

A demonstration tent was erected on Boston Common. Did the willing citizen want to know just how? The demonstrator in the tent would show, not merely tell. Hitherto the typical home backyard of Boston differed not from that found elsewhere. It was not an artistic success. It contributed little to the beauty of the rear landscape, but in one year much was changed. But appearances aside, the big fact remains that hundreds of people who never had grown anything before last year grew hundreds of bushels of vegetables which helped feed their families. They



Conventional clothes do not always fit with work. One woman's solution of the problem "how to dress"

have learned the lesson of the earth's fertility; and this City is but a representative of many.

Don't throw garbage on your garden unless it is well dried up or thoroughly decomposed. Even then don't bury it under without adding lots of lime. Garbage sours the soil, frequently contains maggots and is about the worst stuff to be put into the garden.

* * *

Do you know that a row of swiss chard, forty feet long, will provide all the green feed a flock of twenty hens can eat between middle of June and Thanksgiving? Try it, sowing the swiss chard very thinly, thinning out the plants to stand a foot apart in the row and permitting them to develop well before starting to remove the outside leaves.



A tractor plow tore up acres of park land for citizens' gardens



The little suburban grass plot in the front yard was devoted to potatoes—every little bit helps

"Worm" Peach Trees Now

IN PEACH growing as in many other things "eternal vigilance is the price of liberty." But the peach is well worth it. I have always found it advisable to try to get rid of the borers in my peach trees during mid-autumn. At that time the grubs are much smaller than they will be in the spring and will, therefore, have done less damage. They are also large enough to be easily seen, at least the majority are. To make sure that I get them all and to



Worm out the peach borer in spring as well as fall. Earth hilled up in late spring forces the egg-laying higher up

make "worming" as easy as possible I practise the following plan:

First, I examine the trunks and main branches because occasionally a borer may be found above ground. Then I critically examine the collar and carefully remove the earth with a trowel to the depth of four to six inches, all the while keeping a sharp lookout for the gum and the sawdust-like castings which indicate the presence of a borer. When one is found I dig it out and kill it. I do not then fill in the earth because of the possibility of having missed some grubs that may not have made visible castings. In ten days or two weeks I go over the orchard a second time to discover the borers that were missed the first time. I have even found it a good plan to go over the orchard a third time shortly before winter sets in to make sure I have killed every one of the grubs. Then I fill in the earth around the trees and tramp it down firmly.

I have also found it a good plan to mound up the earth around the trunks in late spring before the adults, the moths, appear. While this entails some work yet it compels the moths to lay their eggs higher up on the trunks, thus making it easier to get at the grubs. The eggs are laid any time between late spring and midsummer, usually in June and July. So the mounding need not be done much before the middle of May, at least in the northern half of the United States. I have never noticed any ill effects from the mounding, even when the earth was allowed to stay heaped around the trunk longer than was actually necessary. No repellent, no poison, no contact insecticide I have ever tried, has proved as effective as this worming process which is a positive remedy. I know of no commercial peach grower who has been any more successful than I have with these methods. Every one practises the digging out plan. It is costly, of course, but it is sure.

M. G. K.



**"It's really fun to work
with that weeder"**



**Gilson
Weeder**

For Flower Gardening

Unexcelled for cultivating under shrubs, bushy plants and flowers. It can be run close to plants and shrubbery without harming them, because the side-arms act as fenders for the cutting blade. Every stroke counts, backward and forward. There is no tiresome chopping movement, as with the ordinary hoe.

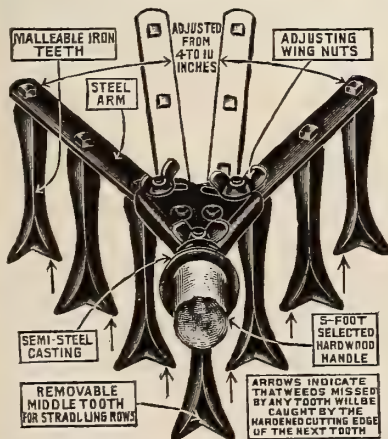
3½-inch Blade for Narrow Rows	80c
5-inch Blade for General Work	90c
6-inch for Lighter Soil	95c
8-inch Blade for Wide Rows	\$1.10

Labor Saving Tools You'll Need

Yes, you'll need more tools this year than ever before, also better tools. Help is scarce. There will be just as many weeds as ever. You can't afford to make a smaller garden and you need not, if you call to your aid

The Liberty Cultivator Weeder

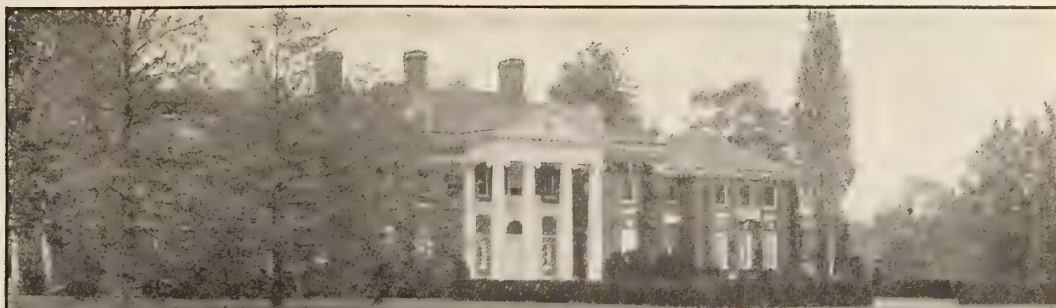
This latest addition to the adjustable cultivator family is as all-round a tool as any gardener may wish for. Its scientifically shaped teeth destroy weeds, break up the soil and pulverize it. A hoe, weeder and cultivator in one, easily handled, quickly adjusted.



The adjustable Liberty Cultivator-Weeder, with 5 ft. polished ash handle, \$1.50. Complete with Special Wheel Attachment, \$3.00.

Send for descriptive circulars—free

J. E. GILSON CO., Port Washington, Wis.



A Good Lawn Needs More Than a Man and a Mower

—and hardy, vigorous lawns need something more effective than ordinary fertilizers. There are so many grass plants to the square foot that each one must make vigorous growth to give a thick green lawn.

Starved lawns result in the grass dying out and weeds coming in. This is the way crabgrass gets its hold, and no worse nuisance is known to lawn owners.

Grass is a humus-forming crop; it does not need stable manure, nor humus, nor sheep manure, but it demands concentrated plant food. If it receives this, the grass will itself, in its growth of roots, fill the soil with humus.

Takoma Odorless Lawn Fertilizer

meets the widespread need for a really efficacious lawn grass fertilizer as nothing has heretofore done, and has the decided advantage of being absolutely odorless. Send your order now, and apply this month. Can also be used to topdress roses and other plants lacking vigor.

Comparison With Other Materials Recommended For Lawns

To fertilize an acre satisfactorily with stable manure requires 10 to 15 tons, making the average cost \$40; Sheep Manure 1 to 2 tons, average cost \$40; Humus, 2 to 4 tons, average cost \$35; Bone Meal (highest grade) 1000 pounds, costing \$25; *Takoma Odorless Lawn Fertilizer* only 400 pounds, costing \$18, the most economical material of all and the most efficacious

Prices and Application

This Plant Food is very concentrated, and should always be applied only one pound to one hundred square feet. Our 50 lb. package, sufficient for a lawn 50' x 100', at \$4; bag lots, in 100 lb. bags, at \$6.50 per bag, delivered by express anywhere east of Cleveland, Ohio. Acre quantities, 400 lbs. or more, at 4½¢ per pound f.o.b., Takoma Park, D. C., for shipment anywhere, by express or freight.

A booklet on "The Maintenance of Lawns" will be sent to any one on request.

We have no agents. Our products are shipped direct by us to the consumer.

Odorless Plant Food Company

1317-19 NEW YORK AVENUE, WASHINGTON, D. C.

Have you a garden?

Takoma Odorless Garden Fertilizer is made to make your garden grow. We believe that the best is the cheapest; that the cost of fertilizer is a small item compared with increased yield; for these reasons we recommend this really high grade plant food. Prices same as Lawn Fertilizer; application same or more. This product also put up in 25 lb. packages at \$2 delivered east of Cleveland, Ohio.

The Nation's Duty:—Make More of Better Gardens

This year will mark a crucial period in world's history. The real problem before us is to feed the world. We must produce more food. We must make more gardens. To do all this, less labor is available than ever before.

Fortunately, America can enlist the greatest number of practical, mechanical labor savers ever invented. One of the handiest is shown here.

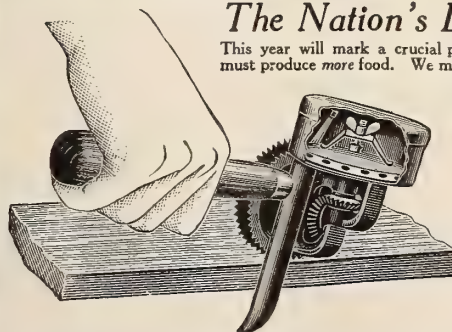
Perfection Seeder Saves Seeds. Seeds are scarce—handle them with great care. With some like onion, radish, tomato and other important vegetables, the seed shortage almost amounts to a famine. By using the Perfection seeder, the double saving of seeds and time is effected.

Ideal for Frames as well as outdoor gardening. Perfection Seeder sows all kinds of small garden seeds evenly, to uniform depth. A board is placed on soil in frame or garden, on which the little wheel runs. This operates the disc in the hopper which regularly drops all seeds. Different size discs are supplied for different size seeds. The drill is equally practical for vegetable and flower seeds, is of simplest construction and cannot get out of order. Satisfactory service guaranteed.

Price \$2.50 Postpaid

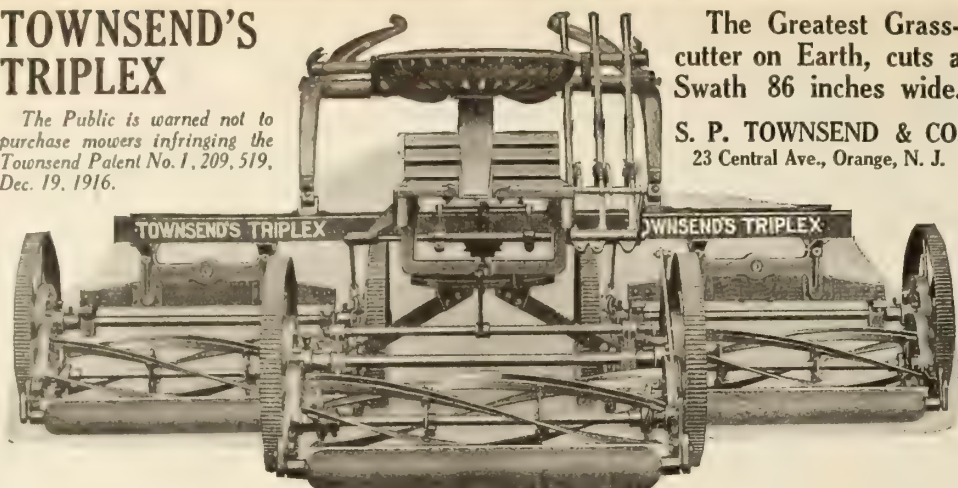
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The Public is warned not to purchase mowers infringing the Townsend Patent No. 1, 209, 519, Dec. 19, 1916.



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S. P. TOWNSEND & CO.
23 Central Ave., Orange, N. J.

Drawn by one horse and operated by one man, the TRIPLEX MOWER will mow more lawn in a day than the best motor mower ever made, cut it better and at a fraction of the cost. Drawn by one horse and operated by one man, it will mow more lawn in a day than any three ordinary horsedrawn mowers with three horses and three men.

Floats over the uneven ground as a ship rides the waves. One mower may be climbing a knoll, the second skimming a level and the third paring a hollow. Does not smash the grass to earth and plaster it in the mud in springtime nor crush out its life between hot rollers and hard hot ground in summer as does the motor mower.

Send for Catalogue illustrating all types of TOWNSEND MOWERS



THE CLIPPER

will cut tall grass, short grass and weeds and do all the trimming along the fence, walks and drives.

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Irises, Peonies, Hardy Plants and Japanese Garden Specialties

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Real Bronze Colonial Designs
From \$3.50 Up

Also Bird Baths, Garden Benches, Fountain Sprays and other garden requisites.

Manufactured by

The M. D. JONES CO.
72 Portland St. Boston, Mass.
Send for illustrated Price-List



Why not make that stony spot a Garden?

Don't "fuss" about those rocks or stones—put them to work! The most charming miniature gardens imaginable can be created in what might otherwise be considered "impossible" places by a judicious planting of

Hardy Rockery Plants anybody can grow

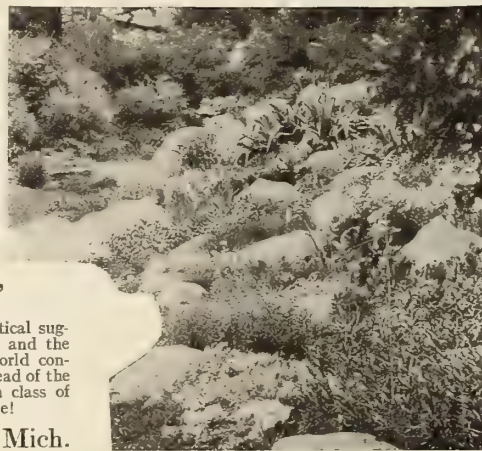
We aren't going to frighten you by giving their latin names which, by the way, are the lovely rock plants' greatest and only handicap. Aside from it, the dainty dwarf forms of Columbine and Rock Cress and Bell flowers, also Rock Pinks, Primroses, Violas, Stone Crops, etc., etc., are the most delightful companions any hobbyist may long for. Let us acquaint you with the charms of Rock Plants, whether grown in rockery or in hardy border. We will mail 12 valuable kinds, one strong plant of each, for \$2.50 postpaid.

"New and Rare Hardy Plants"

is the title of our modest little catalogue which abounds with practical suggestions about Rock Gardens. Hardy plants are our specialty, and the newest varieties and kinds of them are our hobby. The whole world contributes to our stock of new favorites, many of which are so far ahead of the old kinds as to defy comparison. Write us to-day, stating which class of hardy plants interests you. We'll mail our catalogue free, of course!

WOLCOTT NURSERIES

Jackson, Mich.



FOR THE SOUTH

Springtime is Upon Us! Last Plantings to be Hurried

THIS is the month of awakening—Hyacinths and Tulips, and Narcissus and early flowering shrubs are at the zenith of their glory. Warm weather comes apace. It is a month of great activity for constructive work.

The plans made on paper in January must be carried out rapidly. There can be only one more planting of peas, and they should be the wrinkled type such as the Champion of England, for soon the weather will be too hot. Begin again the end of August, for the fall crop.

Cut asparagus early in the morning when it is cool and the dew is on, plunging the stalks in water. Bunch them and keep the butt end in water. This keeps them fresh and crisp and is much better than putting them in a cool place without water. Asparagus should be canned the same day it is gathered.

WHEN cherry and plum trees are in bloom, plant all the hardy vegetables such as beets, carrots, radishes, salsify, and parsnips, and a little later when the apple trees are in full bloom and all danger from frost is over it is time enough to plant corn, okra, snapbeans, lima beans and melons. Take no chances by hurrying things into the ground.

A few things may be gotten to maturity earlier by planting in four inch flower pots a few seeds of cucumber, squash and cantaloupe, and sinking them into the earth of the hotbeds in February or March and transplanting them into the open the end of April. Tomato plants can also be set out the end of this month if protection is given at night in case of frost. Set out the second early cabbage plants.

Sow in coldframes tomatoes for main crop, to transplant and set out later in open ground. Greater Baltimore is a good variety—meaty, red, good shape and fine for canning.

Look after the coldframes constantly. Have the glass off every day to toughen the plants, but be careful to put it on again at night.

Preparation for Late Planting

GET the ground ready for the tomatoes and melons, eggplant and peppers. The two latter can be planted two feet apart; tomatoes four feet; melons five or six feet. Check off the plots for these vegetables in squares, respectively two, four and five feet. At each intersection of the squares dig a two foot hole, half fill with well rotted manure, and mound up the earth over it. When danger of frost is over put a plant in the centre of each hill.

If seed of melon or squash are planted, sow a few radish seed along with them as a catch crop for beetles and cut worms.

Spraying Begins

SPRAY potatoes as soon as they appear above ground to destroy beetles and eggs. Use lead arsenate; one pound in thirty gallons of water, or better still, use one and one half pounds of lead arsenate in fifty gallons of bordeaux mixture as a preventive against blight. Spray every two weeks.

Spray pepper, eggplant and tomatoes in hotbeds and coldframes as a preventive against disease and insects. Take every

(Continued on page 152)



"It's Adjustable"

FROM 7 to 18 inches. Ideal to prepare seed beds and keep the soil thoroughly stirred. Can be used as either a rake or cultivator. The

PULL-EASY

ADJUSTABLE
Garden Cultivator

is the only tool needed from seed time to harvest. Strong, sturdy, well-balanced.

For sale by most dealers. If your dealer can't supply you, send dealer's name with \$1.50 (\$2.00 in Canada) and your Pull-Easy will be forwarded promptly by Parcel Post, prepaid. Literature on request.

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GRAPES IN EVERY YARD

mean preserves, jellies, grape-juice for the table in winter. This spring is the time to start growing this delicious fruit.

HUBBARD'S GRAPE CATALOGUE

will tell you the best sorts for home growing, how to care for the vines and fruit. Send to-day for a copy.

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Garden Furniture

This charming set of Garden Furniture stained weathered gray or green, delivered by express for \$55.00 within radius of 300 miles from Beverly. Painted white or green \$60.00. Add 75 cents for each additional 100 miles. Garden Seats, Garden Houses, Pergolas, Arbors, Weathered Stoneware and other accessories for the adornment and comfort of the garden.

Send for Catalogue

NORTH SHORE FERNERIES
Beverly, Mass.



Our Home

*"It isn't a Palace
Nor is it a Shack"*

WE have more than twenty-five feet frontage but still we're pretty close to our neighbors. Just the same, people *will* stop to admire our house. Architecturally it isn't extraordinary. What makes them do it?

The lawn. If we ever had good judgment it was when we decided to invest in a few plants and shrubs. The foundations needed something badly. Our clothes line and garage, visible from the street, looked better hidden.

Moon's Nurseries were called on. They were very kind. First their catalogue. Then many helpful hints on what best suited our particular stone foundation. Moon's even showed us how to make our lawn look much bigger by an ingenious arrangement of plants. The

cost wasn't much, and it has immeasurably improved the appearance and value of our property.

We know they can help you if you will ask. Moon's have a tree or plant for every place and purpose. This is Spring planting time. Write for Catalogue B-3."

THE WM. H. MOON COMPANY

Nurserymen

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On the Lincoln Highway—Midway between New York and Philadelphia



My HARDY PENNSYLVANIA GROWN TREES are the best for eastern or northern planting. Pecans, English and Black Walnuts, Shagbarks, etc. All trees budded or grafted—no seedlings. *Attractive catalogue free.*

J. F. JONES—The Nut Specialist

Box G

Lancaster, Penn'a

Horsford's Cold Weather Plants

If you have a garden and live where winters are severe you should ask for Horsford's 25th anniversary catalogue of the hardy things he grows up in Vermont. His list offers Lilies, Wild Flowers, Shrubs, Trees and many other interesting things which belong to the hardy garden.

It will pay you to see the Horsford catalogue before placing your orders. Ask for catalogue N

F. H. HORSFORD, Charlotte, Vt.

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Quality
LAWN MOWERS

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Seedsman

FREE—A booklet, "How to Care for
the Lawn"—written by an
authority—mailed on request.



(Concluded from page 150)

precaution this year against disease and insects. Also be careful in the selection and planting of seed. The small seed could be more economically sowed if mixed with dry sand and scattered along the rows. This method insures against planting too thick and obviates the tedious and wasteful habit of thinning out. Of course, those that are thinned out should if possible be transplanted, *but sow thinly this year to make EVERY SEED TELL.*

Sow onion seed in the open ground in rows to make sets for fall planting. Prizetaker is a mild onion for table use, and with heavy manuring makes a large onion. Yellow Globe Danvers and Red Wetherfield are good keepers.

The Worker's Slogan This Year

QUANTITY and quantity should be this year's slogan for, the food producer. Don't waste time and money on experiments. Get seed from reliable dealers, and get well tested varieties suitable for your locality. Thoroughly prepare the soil, lime it and then fertilize intelligently. Fertilizers are expensive. If the wood ashes were saved as recommended these should be mixed with the soil at the time of planting. Acid phosphate with hen manure is fine for onions, and corn and potatoes would profit by the application of hardwood ashes which contain potash. However, deep plowing and liming in the fall helps to liberate the potash already in the soil.

Have a spring cleaning of the stove and furnace pipes and chimneys and put the soot about the Rose bushes. It is an insecticide as well as fertilizer.

Peas and beans produce larger crops if inoculated with nitrogen gathering bacteria; this and humus containing bacteria which is used as a fertilizer are on the market and advertised in THE GARDEN MAGAZINE.

For the Flower Garden

THIN out and transplant Chrysanthemums and other perennials. Sow annuals in the flower borders.

Spray Rose bushes with bordeaux for mildew, and add arsenate of lead to the mixture to destroy larvae of beetles. Use summer strength after the leaves are out.

Get Your Fruits in Order

SPRAY peach, plum and apple trees immediately after the petals fall from the blossoms with a mixture of bordeaux and arsenate of lead; the latter against the ravages of the curculio and the codling moth. The spraying should again be done after the fruit has formed, and then two weeks later. See that the vineyard is sprayed right along every two weeks until the last of July.

Keep orchard trees and small fruits and grapes and indeed all plants and garden truck sufficiently nourished to become hardy and disease resistant.

It is important to have a good sprayer, and proper spray mixtures, and fertilizers well balanced, and containing humus if possible.

Helping the House Plants

HOUSE plants should be repotted and put out of doors. Put drainage at the bottom of the pot—a broken earthen pot is the best. Then put in some loose peaty soil or moss; next a mixture of woods' earth, garden soil, and well rotted manure; one part of each. Ferns could be sunk to the rim of the pots in the garden in a cool, shady spot.

J. M. PATTERSON.

Gladioli

Booklet giving valuable
culture directions free

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All Summer Long**

There is something about the Gladiolus that has led it to be called the "Glad" flower, and it merits the name, for a garden of Gladioli will give you joy from July until frost, and will be a spot of beauty for yourself and friends.

No other flowers equal Gladioli for cutting and artistic decorations. My booklet "The Glory of the Garden" tells more about these superb flowers—write me to-day for a *free copy*.

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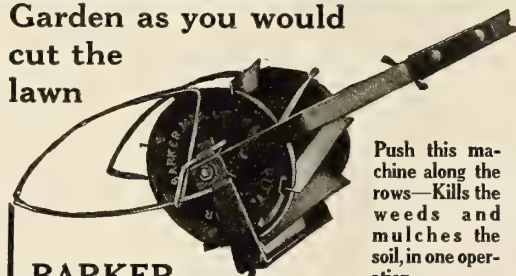
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Color Harmony in Planting Rhododendrons

Two Landscape Architects Reply to the Problem of
a Second Inquirer
Color Groupings of Rhododendrons

THE inquiry by Mr. W. E. Davis, Jr., in THE GARDEN MAGAZINE for February, would easily open up the whole question of color descriptions of flowers, but without going on to that interesting question, I will offer the help that is asked for. The list he gives can be divided into four groups; the whites, the crimson, the pinks, and the lavender or magenta shades.

(1) WHITE: *Catawbiense album*, the purest white of all. *Album elegans*, white with a touch of lavender, or pink; spots are dull yellow.

Boule de Neige, white, (this is distinctly dwarfish in habit).

NOTE: Spots and a blotch of color appear in the throat of all these Rhododendrons, but they will not be taken into account in this color description, except in the one case above noted where they are very noticeable.

(2) CRIMSON: (This group includes crimsons and scarlets; there is no consistent distinction made between these two colors as commonly used).

Atrosanguineum, clear crimson.

Alexander Dancer, light scarlet.

Mrs. Charles S. Sargent, crimson, lighter than *Atrosanguineum*.

Charles Dickens, crimson, lighter than *Atrosanguineum*.

H. W. Sargent, very clear crimson, darker than *Atrosanguineum*.

H. H. Hunnewell, dark rich crimson.

Caractacus, dark crimson.

(3) PINK: *Ignatius Sargent (the Boss)*, deep pink, (clear color).

Henrietta Sargent, rose pink.

Roseum elegans (true), clear deep pink.

(4) LAVENDERS, or those showing some magenta tinge.

Lady Armstrong, pale rose, or a rosy pink.

Eccrestianum, pale lavender, or light lilac.

Catawbiense grandiflorum, mauve, purple shade fading to lavender.

Roseum elegans (false), magenta lilac.

Madame Smith Rhododendron I have never come across and so have omitted it from this list.

Probably no one who is interested in the colors of Rhododendrons will agree to my list entirely, and therefore a few explanations may serve to lessen the disagreements. In the first place, words used to describe colors mean one thing to one person, and a different shade to another person. By crimson, I mean that color which is sold as crimson to the artist, crimson lake or Alizarin crimson. Scarlet is close to crimson, as represented by the artist's color scarlet lake. Several of the most careful nursery catalogues describe *Atrosanguineum* as dark scarlet, but I have compared the flower with the artists' crimson, and it corresponds with that color; so it is better to call it "crimson" than to call it scarlet modified by the adjective "dark." In using the word "pink" for *R. Ignatius Sargent*, I mean the color which F. Schuyler Mathews gives on his color chart as "pink." The pink Dogwood is of this color running from light to darker shades of the same color. It is a clear color with no touch of the purple or magenta in it. *Henrietta Sargent* is not a clear pink of this class, but it has not enough of the lavender in it to relegate it to the class 4. Unfortunately the word "pink" is more loosely applied to flowers than any other color, it seems to me. There are two *Roseum elegans* as sold by nurseries. The one I have called magenta lilac will seem to some on account of the use of the word "magenta" to be of a very undesirable color, but if I describe it as crimson-pink with a touch of the purple, it loses the stigma that has come to be attached to the word "magenta." Some nurserymen avoid the term magenta, because it lessens the sales of the unfortunate plant to which its name is applied; and so a good deal of confusion is caused by the many different combinations of words used to describe

(Concluded on page 156)

Plant Norway Maples For Quick Effect

Plant Harrisons' Norway Maples this spring. Robust and hardy, they grow rapidly into towering round-topped trees with a dense bright-green foliage. They will be a source of delight when hot days come.

Harrison Quality Trees

are grown by experts in "The World's Greatest Nursery"—carefully shaped by proper pruning. They have magnificent root systems—will live and thrive in any state, North or South. We grade liberally—you get good, big trees for your money. All Harrison Trees are packed with great care—roots of ornamentals are securely wrapped with burlap. Equal pains are taken with large and small orders. We ship by freight, express or parcels post.

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 TILE is a clean,
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 odorless it will not
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 (DOOR) test

 A black and white photograph of a man wearing a flat cap and a dark coat, leaning over and watering a variety of potted plants with a watering can. The plants include some with large, dark leaves and others with lighter, more delicate foliage. The man is looking down at the plants as he waters them.

A black and white photograph of a dense, tall plant, likely a grass or reed, with many small, dark, circular spots (possibly seeds or fruits) visible on the leaves. The plant is growing in a field, and the background is a bright, hazy sky.

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West Newbury, Mass., Box A.

(Concluded from page 154)

magenta, when the one word would settle the question clearly, and avoid creating confusion of meaning. The true Roseum elegans is very beautiful indeed and far superior to the false one. So far as I know there is only one nursery in this country that I am sure has it in stock.—*Harold Hill Blossom, M. L. A., Mass.*

In order to classify more definitely according to color, the list of Rhododendrons submitted by your correspondent in the February number, it has seemed to me desirable to include some other colors in addition to those mentioned and also, it seemed worth while to add a number of kinds of varieties. Practically the entire list here given is made up of easily obtainable kinds, which are hardy from New York southward, and most of them somewhat north of there.

RED: *Atrosanguineum* (one of the earliest red ones; out of bloom before most of the others). *Charles Dickens*. *H. H. Hunnewell*. *Gen. Grant*. *Kettle drum*. *Mrs. Milner*. *Lady Clermont* (Foliage apt to turn yellowish in sun). *James McIntosh*. *Prometheus* (Wonderful in color; perhaps not as hardy as might be desired, but worth coddling in a protected situation). *F. D. Godman*. *James Bateman*. *Charles Bagley*.

PURPLE-RED: *Caractacus*. *Abraham Lincoln* (Pres. Lincoln is said to be different; rose-lilac perhaps).

PINK: *Alexander Dancer*. *Henrietta Sargent*. *Charles S. Sargent* (dark). *Mrs. Charles S. Sargent* (sometimes known as the Pink Everestianum). *Ignatius Sargent* (The Boss). *Lady Armstrong*. *Roseum superbum*. *Hannibal Smirnovii* (A newly introduced species; very fine).

MAGENTA-PINK: *Rosum elegans*. *Hannah Felix*.

DARK MAGENTA: *Catawbiense grandiflorum*.

WHITE (substantially so; sometimes faintly flushed pink, especially in bud stage). *Album elegans*. *Album grandiflorum*. *Album novum*. *Boule de Neige* (Dwarf; the earliest one of the list; out of bloom before the beginning of any of the others in this list). *Catawbiense album*. *Candidissimum*. *Delicatissimum* (The latest one of the list; only the tail end blooms of some of the others will slightly overlap the beginning bloom of this one). *Mme. Caralho*.

REDDISH PLUM, or darker: *Pres. Roosevelt*. *H. W. Sargent*. *Seflon*.

LAVENDER (or rose-lilac): *Everestianum*. *Lady Grey Egerton*. *Kissena*.

PURPLE: *Purpureum elegans*. *Purpureum grandiflorum*. *Purpureum crispum*.

In explanation it should be said that this classification will do for practical purposes; accurate classification in accordance with a scientific color chart might give different results. As a rule, any combination of the kinds in one color section will be harmonious, but if the kinds composing such a combination be separated by a little white, the proposition will be safer.

The kinds listed under Purple-Red, Magenta-Pink, and Magenta are the most dangerous as to color, because they are just "off" being good reds or pinks, and yet are near enough to be sometimes classified under these colors, and so used. Each one of these kinds kept by itself, or mixed with white, is very effective, but in company with good reds or pinks, loses in brilliance and becomes dingy and disappointing. Possibly the two varieties named under Magenta-Pink harmonize together, but they surely do not with any other color.

The Lavender and Purple kinds harmonize fairly well together, and, of course, go well with white, but not with any of the other colored ones. Most people will agree to this if they have it pointed out to them when the plants are in bloom; nevertheless it is a fact, which seems rather curious, that many people like the violent combination produced by putting red and purple together, say *F. D. Godman* and *Purpureum elegans*. The effect is certainly striking; stuns one from afar in fact. It affects the eye powerfully, almost as Limburger cheese affects the nose. If you like that sort of thing, all right; but most people are apt to cry out, as your correspondent in February, Help! Help!—*Hans J. Koehler, Penna.*

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Each Pound (with proper cultivation) will grow more than Five Lbs. of Luscious Vegetables

A complete plant food to be applied when planting or occasionally as long as growth is desired throughout season.

Why pay extortionate prices for stale vegetables if you have ground enough for a kitchen garden? The original, clean, odorless Prepared Humus, Cream of the Earth. Beware of imitations and substitutes. Prices, F. O. B. cars at warehouse BOGOTA, N. J. 100 lbs. \$3.00. Send for 300 lbs. trial order, \$7.50 with instructions. Please send your dealer's name with your order. Send for **War Garden Circular**.

M. B. ATKINSON, Bogota, New Jersey

Peonies You'll Like
100,000 of the best

Besides Brand's Famous New Peonies, about which we told you last Fall, we grow about 250 surpassing sorts all of which can lay claim to being among the choicest in existence. Every-one of our sorts is guaranteed to be true-to-name.

Try this guaranteed collection.

Here are ten of our leaders, guaranteed to please the most exacting: Louis Van Houtte, Festiva Maxima, La Tulipe, Mad. Calot, Duke of Wellington, Gen. Bertrand, Edulis Superba, Floral Treasure, Meissonier, Avalanche (a big retail value of \$5.40) for \$3.50.

Collection of 12 fine Iris for \$1.00.

Let our complete catalogue acquaint you with all we grow including 300 varieties of Gladioli, many Phlox, Iris, etc., etc. Write for it NOW.

Babcock Peony Gardens, R. R. 79, Jamestown, N. Y.

Be Master of Your Garden

There is a work of satisfaction in a thriving garden and well-kept shrubbery. But bugs and blights in many forms will invade your domain unless you stoutly resist their encroachments. Arm yourself with a convenient, pest destroying



Auto Spray No. 1



and be master of your own garden. Our No. 1, shown here, can be carried anywhere and will throw a fine misty spray or solid stream. The special anti-clog nozzle eliminates bother. The automatic shut-off prevents waste of solution. Our catalogue describes this and many other styles of interest to gardeners. Remember

"You Must Spray to Make Crops Pay"

Send at once for Catalogue. Ask for free Spraying Guide



Protect Your Roses with an Auto Spray

THE E. C. BROWN CO., 850 Maple Street, Rochester, N. Y.



Pergolas

and
Garden
Accessories

for
Beautifying
Home
Grounds

When writing for catalogue enclose 10c and ask for Pergola Cat. "H-30."

HARTMANN-SANDERS CO.
2155 Elston Ave., Chicago, Ill. New York Office, 6 E. 39th St.



SHRUBS TREES PLANTS

Grown to Produce Results

We have an exceptionally nice lot of **Strawberry Plants, Fruit Trees, Vines, Shrubs, etc.** Our book *Hardy Fruits and Ornamentals* tells you about them. Write for your copy to-day.

The Coe Converse & Edwards Co. Nursery & Landscape Men
Fort Atkinson, Wis. (Box E)

"HOW TO GROW ROSES"—Library Edition; 121 pages—16 in natural colors. Not a catalogue. Price \$1, refunded on \$5 order for plants. The Conard & Jones Co., Box 24, West Grove, Pa.

DINGEE ROSES

Sturdy as Oaks
Dingee roses are always grown on their own roots—and are absolutely the best for the amateur planter. Send to-day for our
"New Guide to Rose Culture" for 1918
—it's free. It isn't a catalog—it's a practical work on rose growing. Profusely illustrated. Describes over 200 varieties of roses and other flowers, and tells how to grow them. Safe delivery guaranteed. Established 1850. 70 greenhouses.
THE DINGEE & CONARD CO., Box 487, West Grove, Pa.

ORCHIDS

Largest importers and growers of
ORCHIDS in the United States
Send twenty-five cents for catalogue. This amount will be refunded on your first order.
LAGER & HURRELL
Orchid Growers and Importers SUMMIT, N. J.

STRAWBERRY PLANTS

GROWN ON NEW LAND

Thrifty plants, how to get them delivered to you free of Express charges. I have been in the Plant business 45 years. If you receive my Catalogue it won't be thrown into the waste basket. Send me the names of all the Strawberry Growers you know.

C. S. PRATT

ATHOL, MASS.

MARKET GARDENER'S PAPER

If you grow vegetables, send 25 cents for 3 months' trial subscription and find out what you have been missing. Do it to-day. Satisfaction guaranteed or money back.

MARKET GROWERS' JOURNAL

606 Inter-Southern Bldg.

Louisville, Ky.

Have You Gardening Questions? Experts will answer them free. If a plant fails, tell us about it and ask help from the Readers' Service.

COMING EVENTS CLUB & SOCIETY NEWS

Meetings and Lectures in April

(Following dates are meetings unless otherwise specified)

1. Larchmont, N. Y., Garden Club.
2. New Bedford, Mass., Horticultural Society
3. Garden Club of Pleasantville, N. Y.
4. Short Hills, N. J., Garden Club.
5. Marshfield, Mass., Garden Club.
6. Pasadena, Cal., Horticultural Society.
6. Lake Geneva, Wis., Gardeners' & Foremen's Association.
- 6-15 Society of American Florists' Annual Convention, St. Louis, Mo.
- American Rose Society's Annual Meeting and Exhibition will be held at the International Exhibition of the Society of American Florists, St. Louis, Mo.
8. New York Florists' Club, New York City.
- Garden Club of New Rochelle, N. Y.
- Rochester, N. Y., Florists' Association.
10. Park Garden Club, Flushing, L. I.
10. Valdosta, Ga., Floral Club.
10. Short Hills, N. J., Garden Club.
10. Nassau Co. Horticultural Society, Glen Cove, L. I.
12. Lenox, Mass., Horticultural Society.
12. Westchester, N. Y., & Fairfield, Conn., Horticultural Society.
13. Connecticut Horticultural Society, Hartford, Conn.
16. Dobbs Ferry, N. Y., Horticultural Society.
16. Gardeners' & Florists' Club of Boston, Horticultural Hall, Boston, Mass.
17. Rhode Island Horticultural Society, Providence, R. I.
17. Short Hills, N. J., Garden Club.
18. Tarrytown, N. Y., Horticultural Society.
18. Salisbury, Conn., Garden Club. Subject: Wild Gardens.
19. Marshfield, Mass., Garden Club.
19. Dahlia Society of California, Palace Hotel, San Francisco.
20. Pasadena, Cal., Horticultural Society.
20. Lake Geneva, Wis., Gardeners' & Foremen's Association.
22. Park Garden Club, Flushing, L. I.
24. Short Hills, N. J., Garden Club.
26. Connecticut Horticultural Society, Hartford, Conn.
27. Dobbs Ferry, N. Y., Horticultural Society.

What the "S. A. F." Means to Us

THE Society of American Florists aims to increase the knowledge of horticulture and floriculture, and with this idea in view has organized gardens in different cities where it has held Conventions. It has also organized and held in the last ten years, four gigantic Flower Shows in different cities, the object being to show the people the best there is in horticulture and floriculture, and to awaken such an interest in this particular line where the exhibitions were held as to enable the said cities to hold their own Flower Shows in succeeding years, without any further aid from the parent Society.

New York is an excellent example of this, as it has held very successful Flower Shows every spring since the first big Show of the "S. A. F." in 1913 held in the Grand Central Palace. These Flower Shows are not undertaken with an idea of profit. Of course, the Society wants them to cover expenses, if possible, but they are held with the main idea of conveying to the public the wonderful progress that American horticulture has made and to inculcate into the minds of the people a truer appreciation of the beautiful so that every garden and every home might literally blossom like the Rose.

The power for good by flowers is incalculable. The man or woman who gets to love and grow flowers is a better citizen for it in every way, as the love of flowers appeals to what is best in the makeup of human beings. If a benefactor is one who makes two blades of grass grow where only one grew before florists are all members of that great body, since many of them are making dozens of flowers grow where none grew before, and are entitled to a high place in that agency which is working for the good of the Commonwealth.

(Continued on page 160)

COLLINS' GUIDE, FREE

COVERS ALL GARDEN NEEDS

Privet Hedge, sturdy plants at less than 5c a foot—will soon add \$1 a foot to your property value.

100 Berry plants for \$2.25—finest fresh strawberries and raspberries from May till October at 2c a quart.

5 finest roses, guaranteed to grow, delivered to your home for \$1.

Shows these special offers in colors; tells how to get finest fruit, asparagus roots and vegetables at lowest cost. Write to-day.

ARTHUR J. COLLINS & SON, Box 23, Moorestown, N. J.



Farr's Hardy Plant Specialties

For Early Spring Planting

Year after year the hardy garden grows more charming and valuable as the plants increase in size and blooming power. Early spring is a desirable time for selecting and planting most perennials and shrubs.

In my comprehensive collection at Wyomissing may be found plants suitable for every phase of gardening. A few of these are here noted—to list them all would be impossible:

IRISES. An unusual and distinctive collection, including many novelties of my own raising (Awarded the Panama-Pacific Gold Medal).

PEONIES. The most complete collection of herbaceous and tree Peonies in the world.

Delphiniums, Phloxes, Chrysanthemums, Trollius, Long Spurred Aquilegia, Hardy Asters, New Astilbe, Roses, Dahlias.

New Japanese and Asiatic Shrubs. New cotoneasters, enkianthus, berberis, flowering cherries, corylopsis, etc.

Lilacs, Philadelphus, and Deutzias. A complete collection of Lemoine's new creation.

Dwarf Evergreens: Rare specimens for formal gardens, lawn groups and rock garden plantings.

A complete list of my collection of Hardy Plants and Shrubs will be found in

Farr's Hardy Plant Specialties

(Sixth Edition) 112 pages of text, 30 full page illustrations (13 in color). Most well-informed gardeners have a copy, but if you have not received it, or it has been mislaid, a duplicate will be sent promptly on request.

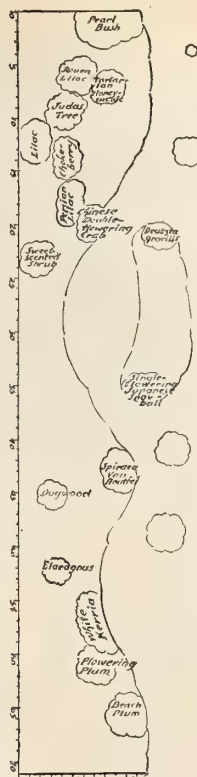
BERTRAND H. FARR

Wyomissing Nurseries Co.

104 Garfield Ave.

Wyomissing, Penna.

Planning the Garden. So many have asked me to help them plan their gardens that I have found it necessary to form a special department in charge of a skilled landscape designer and plantsman. I will be glad to assist you in any way desired by off-hand suggestions or by the preparation of detailed plans for which a charge will be made.



"The Most Helpful

Garden Book We Have Ever Seen!"—is the verdict of everyone who has examined the advance proofs of our new "catalogue," *Home Landscape*, which is totally unlike any garden catalogue you have ever had. It is really a practical guide that shows in graphic fashion exactly how to do things. These cuts, for example, are reproduced (in miniature) from the page about *May Shrubs*—photographs on one side, planting layout on the other, and description in between. And there are "movies" in sketch form showing how to plant and take care of fruit trees, evergreens, flowers, etc.—and many other practical helps that will make this book your everyday companion. Send for your copy (free) at once, and tell us about your lawn and garden.

Special Offer for April: 2 Apple Trees, 1 Pear, 1 Plum, 5 Grape Vines, 25 Raspberries, 5 Rhubarb, 5 Currants—all for \$5.00, if you act soon. And send for the free book anyway, to-day.

I. Hicks & Son, "Sixty Years of Knowing How" Westbury, L. I.



A Garden Full of Vegetables for \$1.00

In preparing the following Home Garden Collection of Vegetable Seeds, which if purchased separately from our catalogue would cost \$1.55, we have given critical attention to the varieties offered, selecting only those which have been tried and proven of excellent merit under widely different conditions of soil and climate.

One Packet Each of the Following for \$1.00

Beans—Bountiful
Beans—New Hardy Wax
Beans—Fordhook Bush Lima
Beet—Detroit Dark Red
Carrot—Selected Chantenay
Corn—Golden Bantam
Cucumber—White Spine
Lettuce—Black Seeded Simpson
Lettuce—May King

Onion—White Portugal
Parsley—Double Curled
Peas—McLean's Little Gem
Radish—Scarlet Globe
Radish—Long White Icicle
Spinach—New Zealand
Swiss Chard—Giant Lucibus
Tomato—Selected Stone
Turnip—White Globe

NOTE—With each collection we will send complete cultural directions. Also a copy of our interesting and instructive booklet, 16 pages and cover, devoted exclusively to vegetables.

ORDER YOUR COLLECTION NOW

Mail this advertisement with Check, Money Order, Dollar Bill or Stamps, or present at our store, and secure this excellent collection of Vegetable Seeds for only \$1.00 sent prepaid anywhere in the U.S.

Our 1918 Spring Catalogue sent on request

Stump & Walter Co.

30-32 Barclay Street

New York City

DREER'S "Gold Medal" Gladiolus

We grow this magnificent strain for the express purpose of being able to supply those who want the very best mixture possible.

When Gladioli are grown in mixture they are liable to deteriorate rapidly and finally contain but a few colors.

To avoid this we grow small blocks of a large number of exquisite high-grade sorts from which this mixture is made and which embraces all colors from the richest reds through all the intermediate tones of pink, rose, salmon, blush, white, yellow to the new blue, heliotrope and "pansy colors." Indeed so great is the diversity of colors that there is little risk of any two being exactly alike.

Having a large stock of splendid bulbs, we are able to offer them at a very reasonable price, viz. 60 cts. per doz., \$4.00 per 100, \$35.00 per 1000. If wanted by Parcel Post add 6 cts. per doz. for postage.

The above is but one of our Specialties. For complete list send for

Dreer's Garden Book for 1918

Free on application if you mention this magazine

HENRY A. DREER

714-716 Chestnut Street, Philadelphia





IF you have decided to protect your property by erecting a new fence this Spring, get your figures NOW and HAVE THE FENCE—instead of waiting and getting figures when you could be having your fence.

We are ready now to mail you our attractive illustrated catalog, explaining in full detail our offer to make (without obligation) a blue-print showing the fencing needed to protect your property. Write.

ENTERPRISE IRON WORKS, 1167 E. 24th St., Indianapolis, Ind.
Fencing for Estates, Homes, Public Buildings, Parks, Cemeteries, Factories, etc., etc.

ENTERPRISE PROTECTIVE FENCING

DAHLIAS

By the elimination of inferior varieties, and the addition of those of proven worth, during the past four years, we have to offer this season a selection of Cactus, Decorative and Paeony Flowered Dahlias of exceptional merit.

Catalogue upon Request

FRANK J. McANDREWS'
Dahlia-Poultry Farm

Charleston, Kanawha County, West Virginia

School of Horticulture for Women AMBLER, PA.

Two years' practical and theoretical course in Horticulture. Next entering class for diploma students January 15, 1918. Fall course of ten weeks for amateurs begins September 11th. Write for particulars. Early registration advised.
Elizabeth Leighton Lee, Director, Box 105

TO MAKE YOUR PLANTS GROW

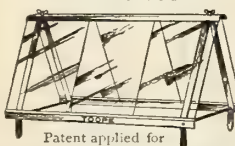
A Wonderful Japanese Discovery
To make delicate plants strong and strong plants more luxuriant, to keep flowering plants blooming longer and make vegetables grow quicker, such are the remarkable properties of

OYAMA ODORLESS FERTILIZER HELPS ALL PLANTS

It stimulates and invigorates the system of the plant. A discovery based on scientific research. Highly concentrated and easily applied. Results show quickly. Price per box by mail prepaid 30c, Garden Size \$1.10 (enough to make 30 gallons). Order to-day.

OYAMA PRODUCTS CO., Box 664, NEWBURGH, N. Y.

COLLAPSIBLE FORCING FRAME



Patent applied for

SOMETHING NEW UNDER THE SUN

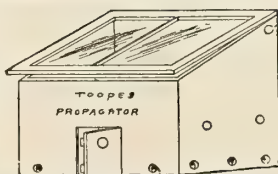
Garden hobbyists everywhere will be interested in two new devices designed to increase gardening results and joys

For Forcing Vegetables, etc., is a rigid frame, so braced that glass cannot be blown out, and is water-tight. Price, \$1.50 each (without glass).

The Propagator is the greatest little "hothouse" ever invented. Heated by lamp. Great for forcing seeds and seedling plants. Prices from \$7.00 and upwards.

Write for descriptive circular of these novelties. Ask your nearest horticultural dealer for full prices. F. O. B. Boston.

The Horticultural Appliance Co., 143 Federal St., Boston, Mass.



TOOPE'S
PROPAGATOR

A Big Tree Need NOT Cost Much

Take American Elms, for instance. A ten-foot quality specimen (the only kind we grow) costs only \$1.25. Yet, it is large enough to immediately create the desired effect.

Cut Leaf Weeping Birch, as shown alongside, is another one of our specialties. One of the most beautiful and graceful ornamental trees we know of, we grow it in large enough quantities to sell at reasonable prices.

SPECIAL OFFER: We will send a fine specimen tree of this variety, 6 to 8 feet tall, for \$1; 10 for \$7.50. It matters little what you buy from this nursery—you are bound to get your money's worth and more.

"Service Plus" in Stock Supplied

The manner in which we handle all orders is responsible for our having customers in every state of the Union. They are satisfied customers, too, because all come back for more stock whenever the need arises. Our special service of suggesting plants, etc., suitable for each particular soil and climate has saved our customers large sums and many mistakes. Let us serve you.

Send For Complete Catalogue Let our only salesman acquaint you with the extent of our stock growing in 150 acre nursery. We have everything worth growing in fruits and ornamentals, flowering shrubs, hardy plants, shade trees, evergreens, etc., etc. All are grown under the most rigorous system of cultivation and weeding out the unfit. Our service of planting suggestions is yours to command—no obligation. Write to-day.

WILLADEAN NURSERIES

Sparta, Kentucky



(Concluded from page 158)

The present status of the S. A. F. & O. H. is better than ever before. Organized as it is under a National Charter it holds Conventions in different sections of the country and better methods of growing and marketing flowers are discussed.

CHARLES H. TOTTY, President.

Vegetables to be Relied Upon

IN PLANNING and making the initial plantings of your patriotic garden this month, it is well to anticipate probable wants in vegetables for winter use. Quite apart from the regular supply of fresh vegetables provision should be made to grow a variety of the most important staples for the express purpose of either canning or storing.

The initiated, with last year's records and previous experience as a guide, will work out a definite programme of his own. But the new comer to the ranks will be somewhat puzzled by the maze of varieties that confront him when seeking to select sorts of decidedly dependable character. With this in mind, we submit a list of varieties of acknowledged good yielders and excellent quality. Those suggested for storing are of unsurpassed keeping qualities and, as far as we know, the seed supply of all (with the possible exception of onions) is fair.

BEAN, Hodson Green Pod. When less than 5 inches use as a snap bean; when larger than this as a shell bean for winter. Sow middle of May.

BEEF, Detroit Dark Red. Can when roots average 2 inches in diameter. It costs twice as much to cook a large beef stored in sand or soil in cellar than to prepare the young beets for cans. Sow now.

CABBAGE, Premium Flat Dutch. The ideal sort for winter storage or kraut making. Sow early in May, transplant in July and store before frost.

CARROT, Danvers Half Long. For decades the standby of New England's critical gardeners, this has never been surpassed as a sort for winter storing. For canning while young, (like beets) use Chantenay or Model.

CELERIAC, Giant Smooth Prague. The turnip-rooted form of celery which keeps well in sand or soil and is served stewed, or cold as a salad. Sow now and transplant in July.

CORN, Golden Bantam. Store in cans and follow authoritative instructions implicitly. The time of sterilization is long but necessary. Sow in middle of May.

KOHLRABI, White Vienna. A turnip-rooted form of cabbage, particularly palatable when canned like young beets. Sow now; can in early June or sow in July and can in early September.

LEEK, American Flag. Unsurpassed to give consistency and flavor to soups and stews. A mild form of onion, grown like them and stored in soil, like celery. Sow now.

ONIONS, Yellow Globe Danvers is the best for early use; **Southport Red Globe** the best for use until spring. Sow both any time this month and transplant every extra seedling—onion seeds are very scarce.

RADISH, White Chinese for storage and use between November and February; **Black Spanish** for use between February and Spring. Both are stored in sand or soil, from seeds sown early in July.

TOMATO, Globe is ideal for canning whole. It is of richer color than most other purple sorts and every bit as solid, in proportion, as **Beefsteak**, **Ponderosa** or any other larger kinds. Sow seeds early this month, transplant Decoration Day and start to can middle of July, selecting the most perfect fruits of each cluster.

TURNIP, Purple Top White Globe, sown in early July, is the best for early use during fall and winter; sown now, it is ready for table use in sixty days after planting. **RUTABAGA** or Swedish Turnip, **American Purple Top**, is the best keeper. For late winter use, sow seeds late in June and harvest in November.

* * *

Take weeds seriously early in the season. A weed pulled up by the roots will never cause further work or trouble. Weeds with the tops pulled off generally live to grow new tops. Look upon weeds as a national enemy—they sap fertility, injure the cultivated crop, cause work that is pure waste. Fight weeds to the finish!

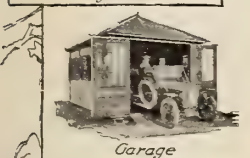
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Early April is generally a good time to provide pea brush and tomato stakes. Pruning trees and saving the wood for brush should go hand in hand. Where the lumber yards want too much for tomato stakes, it may pay to invest in the permanent wire contraptions.

HODGSON *Portable* HOUSES



Play House



Garage



Bird House

WHEN you decide to build a small house of any kind you invite trouble, dirt and expense to your door. It starts with the deciphering of numerous, complicated blueprints. Then follows dust, dirt, racket and extra expenses. And when the building is finished a ruined lawn and maybe disappointment stare you in the face.

Side-step all this trouble. Buy a Hodgson Portable House. Select your bungalow, cottage, garage, playhouse, or any other kind of house from actual photographs shown in the Hodgson catalogue.

Then your house will be shipped to you in neatly finished, fitted, painted sections. Unskilled workmen can erect it in a day and you have the exact house you selected and at the very same price.

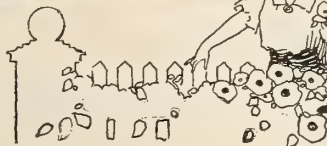
Send for a catalogue to-day.

E. F. HODGSON CO.

Room 228 116 Washington St., Boston, Mass.
6 East 39th St., New York City



Cottage



GLADIOLI



Antoinette

Don't worry about the proper pronunciation—call them "Glads." and there will be no question in your mind as to their being rightly named.

Plant them in May; hoe them a little during the Summer. When they bloom, the wide range of color and form will delight the most fastidious taste.

Some, the children properly call "Butterfly." Some have the delicacy and indescribable coloring of the opal or the Iris. Some are gorgeously brilliant; most are gay, and some that are demure and modest are still beautiful.

Our modest catalogue carefully describes by color chart methods 150 of the choicest varieties found either in America or Europe including many rare and unusual varieties that are obtainable from us only.

Try the following collection:—

Albert First	50 cts. each	Emile Aubrun	60 cts. each
Antoinette	45 " "	Empress of India	8 " "
Baronne de Ivoley	75 " "	Evelyn Kirtland	25 " "
Bertrex	20 " "	Fille de France	45 " "
Blue Jay	35 " "	Loveliness	30 " "
Dawn	20 " "	Schwaben	40 " "
Daytona	60 " "	Primulinus Hybrids	6 " "
Deuil de St. Pierre	35 " "	Primulinus No. 24	30 " "
Total.....			\$5.84

Price complete—\$5.00

The catalogue which is free for the asking describes fully, Peonies, Iris, Dahlias and other flowers as well as all vegetables.

THE WING SEED COMPANY

Box 1526

Mechanicsburg, Ohio

FREE—Write to-day for new catalogue entitled

The World's Best Dahlias

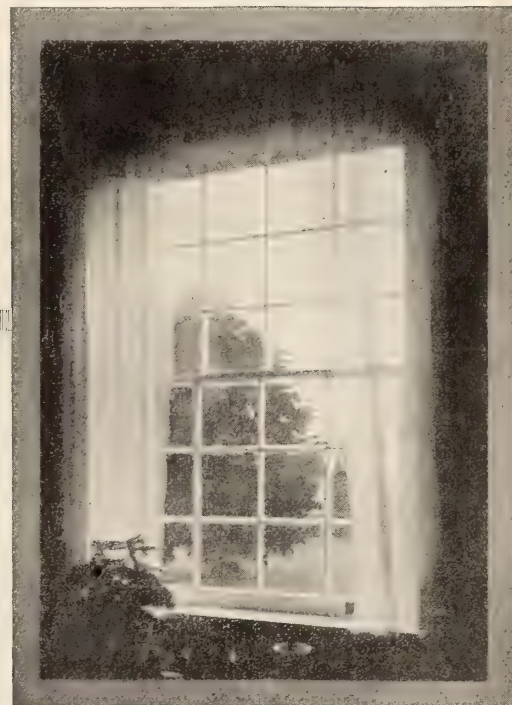


Accurately describing all the best new and standard varieties in Cactus, Decorative, Giant Flowering, Show, Fancy, Pompon, Pæony, Duplex, Collarette, Century, and Single. Natural reproductions of new Decoratives, "Dr. Tyrrell" and "Minnie Burtle" and 38 beautiful half-tone illustrations of the distinct types. The leading Dahlia catalogue with the 1918 novelties.

PEACOCK DAHLIA FARMS

Berlin, New Jersey

HAVE you a vision of your lawn—unfulfilled—as you look out of your window? Have you a picture that makes you say, "If only my grounds looked like that!" Send us the picture, or tell us as best you can of the ideal lawn you have been dreaming of—and see if we can't give you a pleasant surprise with a plan and estimate that will bring your dream immediately within your reach. We have made so many dreams come true for big homes and little homes, big incomes and little incomes—at a cost way below what was expected, and in a miraculously short time—that we boldly invite you to bring your most fairy-like visions of lawn and garden to us—and see if we can't help you. And when we do help you, it will mean from that moment on a new joy in living—a new comfort and shade and beauty and health and profit from country life such as you have never even dreamt of before. Sit down to-day and write us all about your lawn and garden—what it is, and what you want it to be. Then see what happens (no, you involve yourself in no charge whatever until you deliberately order your trees, shrubs, flowers, fruit-trees—whatever it may be). Write to-day!



I. HICKS & SON, "Sixty Years of Knowing How"

Westbury, L. I.

Phone 68



Gladiolus "Kunderdi"

*The Wonderful New Races
With Wavy or Ruffled Petals*

*New Class New Types
New Colors*

NO OTHER strains are near so beautiful and your collection cannot be up-to-date without them. Send for our 1918 Free Catalogue of 52 pages with many beautiful illustrations. It describes nearly 300 varieties (all of our own production). 83 extra grand new ones now offered for the first time and only obtainable from us. It contains the most complete cultural notes and valuable information on gladiolus, including how to grow Giant or Prize winning blooms, and how to have them flowering throughout the entire summer and fall, until freezing weather sets in. It is time to plant now.

Address the originator
of the Ruffled Gladiolus

A. E. KUNDERD
Goshen Indiana

Blame Your Own Undue Haste, Not the Bean Seed

I KNOW of no vegetable—my experience is confined to California—that can act so like a child spoiled with too much petting as the lima bean. The first year that I tried its growth, I had the soil carefully prepared and well soaked before I sowed the seed, and by way of good measure I turned the water down the furrows afterward. A few stunted leaves, the seeds, spotted yellow and sickly-looking, still clinging to them, made their way up through the moist earth. But most of the poles, placed at three-foot intervals, stood bare and expectant. I reseeded the ground, with the same result. I then had no doubt, since all else was right, that the seed was poor. But a fresh purchase brought no better returns.

The next season I repeated my struggle, but this time I sowed my seed in another part of the ranch, in the rich, alluvial soil known as "tule." The sowing occurred in April, while the ground was still very moist from spring rains, and the weather, although good "growing weather," had not yet settled down to any steady temperature. I had the same old disappointment, and as everything in the "tule" grows like mad, I knew the trouble could be nowhere but with the seed.

A month later, May 15, my brother suggested as we were passing an unused bit of land that had been plowed the previous fall and replowed in the spring, that I make use of it for a garden. I replied that it was too late in the year, and the ground too dry. Still, as I was garden-mad, I tried it with my lima bean seed, throwing it in by the handful, until my brother remarked that if I were to do ranching on a large scale it would take the bank of England to finance me. It was a week later before I passed the spot again, and then I almost reeled in my saddle. Every bean that I had put in the ground had sprouted, and was simply rioting with all the primal force of nature. Of course, I had to thin them out to four in a hill, and it nearly broke my heart. I prepared immediately to baby those left. The patch—perhaps 50 x 400 ft.—was on the bank of a slough that meandered through the land. I insisted on a siphon being installed and ordered a quantity of willow poles cut. The man to whom I intrusted this job, smiled and asked me to let him tell me what he knew about lima beans in Ventura County, whence train loads are shipped east every fall.

Beginning with the seed, he told me that they never sowed them until the ground had partially dried from the spring rains. Under no circumstances must they be sowed in wet, soggy ground. He added that he had known ranchers make an entire re-planting, when unexpected late rains had wetted the soil. Secondly, the weather must be settled and warm. Chilly days or nights so discourage the bean that it is apt to give up the ghost. After they are up, hoe them and keep down the weeds until they begin to run, then leave them to themselves. Poles are unnecessary, a detriment in fact. The running vine forms a shade for its roots that acts like a mulch. There is no danger from mould or rot in the long, rainless, California season.

I followed the man's advice. When my vines had four leaves I dug up several and found that their roots measured a foot in length. As they were so spry in seeking moisture in depths where it could be found, I

(Continued on page 164)



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The Outcome of the War Depends on Ships!

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This is why the Government's call to enroll 250,000 skilled workers for the shipyards is so urgent; so vital.

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Will YOU make some sacrifice, so that the Government can get the skilled men required? Talk it over with your employees; explain the great need to them, and if some of them wish to enroll in the United States Shipyard Volunteers, make it easy for them to help the Government.

They will be paid good wages; millions are being spent by the Government to give them good homes; they will work at trades for which their experience has fitted them; they will come back to you better, faster workers. Every Volunteer will receive a badge and a certificate, showing that he is doing his bit for America.

You can perform no greater patriotic service

to your country than by helping to build ships. Greater than the need for money, is the need for men—skilled men.

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Mail the coupon to-day—get all the facts—and talk it over with your men.

-----For Further Information Mail This Coupon-----

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U. S. Shipping Board, Washington, D. C.

Please tell me how I can help the Government enroll 250,000 Shipyard Volunteers.

Name

Address

Firm Name.....

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FOR THE WINNING OF THE WAR

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HODGSON *Bird Houses*



Suet Box



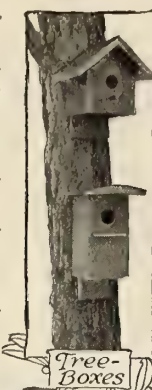
Bungalow



Old Homestead



Colonial



Tree Boxes



Dutch Colonial

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Suet Box	95c each—\$9.00 per dozen
Bungalow	24" x 28" — 6 rooms—\$12.00
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Tree Boxes	\$1.25 each or \$10.00 per dozen

**E. F. HODGSON CO., Room 228, 116 Washington Street, Boston, Mass.
6 East 39th Street, New York City**

(Concluded from page 162)

abandoned the idea of irrigation. I have no means of knowing what that crop produced other than that at least fifty people had their fill of lima beans from about September first until December sixteenth, when we had our first good rain.

I afterward asked a Chinese grower, who grew them on the same sort of soil on one of the islands in the Sacramento River Delta what his crop averaged. He answered six hundred sacks—ninety pounds to the sack—of green lima beans to the acre annually.

As I have heard people in Central California complain that they could do nothing with lima beans—Ventura was their only home—I am hoping that my fortunate experience, repeated year by year, may prove a help.

California.

EFFIE EGBERT.

Scuffle Hoe Tillage

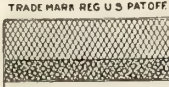
THE EXTENSIVE farmer has found that fall plowing not only stores up moisture in the ground for summer use and improves the physical condition of the soil as the result of freezing and thawing, but that it also saves labor at a season when time is precious. Spring disking of fall plowed land makes a fine seedbed, and may be done earlier and much more rapidly than spring plowing. The intensive back yard gardener, who works with hand tools, may follow somewhat the same method. We all agree that it is good practice to spread a thick layer of manure over the garden in the fall and fork it under, leaving the ground rough so that it may have the benefit of winter weather changes. By spring the alternate freezing and thawing and the pounding of the rains will have broken down the clods and done much in the way of leveling.

When planting time comes the early spring winds and sunshine will have dried out the ground to a depth of three or four, or perhaps even five, inches. Deeper than this is mud, and an attempt to use the digging fork will turn up stiff pasty clods that cannot be put in condition to receive small seed. Here is where that great weed slaughterer, the scuffle hoe—or push hoe, as it is sometimes called—is of the greatest value. Working it backward and forward in the comparatively dry top of the soil will result in as fine a seedbed as can be made with any tool. A depth of three inches of pulverized soil can be reached much more rapidly, more evenly and thoroughly, and with much less labor, than the ground can be dug, and there are no clods to be made fine with the rake at the finish. If the ground is gravelly, the hoe, of course, does not work so readily, but, even so, it involves less labor than the digging fork. Thus a seed bed can be prepared over a root bed that has already been made by the fall plowing. Last spring I did all my planting in this way, and never had better tilth, less hard labor, more satisfactory germination or better growth. For transplanting potted plants and for late peas there will have to be digging in order to reach the necessary depth, but for the small seeds of very early plantings, such as onions, salsify, spinach, mustard, etc., my experience is that the scuffle hoe gives better results and with less labor. Chemical fertilizers may be worked in very evenly and satisfactorily if spread on the ground before work is begun with the hoe.

HORTULUS.

"BUFFALO"

TRADE MARK REG. U. S. PAT. OFF.



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Move Your Poultry Yard When and Where You Want It By Using "BUFFALO" Portable Poultry Runways

This new fencing system enables you to make any size yard desired and move it to other locations at will. To erect simply push legs into the ground.

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7' long x 5' high		\$3.75 per section
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8' " x 2' " "		2.00 " "
6' " x 2' " "		1.60 " "

PLUS 10% TO THE ABOVE PRICES.

These are effective April 1st, 1918, f.o.b. Buffalo and are for orders consisting of six sections or more. Above sizes can be shipped from stock immediately. Special sizes made to order on short notice. Send money order, check, New York Draft or currency by registered mail NOW! Don't delay, freight conditions are bad and delay in ordering may disappoint you in delivery.

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Wonderful Forms Beautiful Colors

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Your kitchen scraps will furnish most of the feed this little flock will need. These grown birds will require little care—no more than would be required to run to the corner grocery for fresh eggs.

The United States Department of Agriculture or your own State Agricultural College will gladly furnish you with full instructions.

Our plan is simplicity itself—does away with all the bother of hatching and brooding chicks. Baby chicks are all right for the expert but they are a risky investment for the beginner. Try our plan of "simplified" poultry keeping.

Start the easy way with "squab" or mature pullets. These birds will be hatched in our own mammoth hatchery from scientifically mated birds and raised under the watchful eye of an expert until ready for your backyard. We ship them to you when from two to five months of age—fully feathered, rugged and hardy.

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Major Planning Manual
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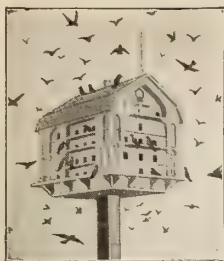
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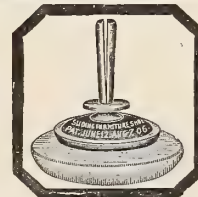
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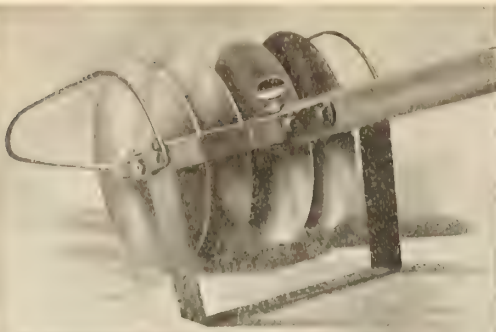
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BUT, wouldn't you like to know which really are the best and most satisfactory to grow of all the catalogued varieties?

Perhaps it will surprise you to know that there are only just about FIFTEEN, that are worth while for the average garden lover and amateur.

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THE PUDOR FARMS, Puyallup, Wash.
Plant, Seed and Bulb Growers

De Lue's GOLDEN GIANT
TRADE MARK REGISTERED
New Early Hybrid **SWEET CORN**



Acclaimed the most important horticultural acquisition of recent years. Awarded the only medal ever given for sweet corn by the Mass. Horticultural Society in nearly a century. De Lue's Golden Giant is the result of 12 years' selection from the product of Howling Mob crossed with Golden Bantam and combines all the good points of both parents—and then some.

It excels all other early varieties in size, productiveness and quality and all the late varieties in quality and early maturity. It is the one corn for the home or market gardener who desires the greatest amount of highest quality corn in the shortest period of time. Illustrated Booklet "How to Know and How to Grow Medal Sweet Corn" sent with order.

Price 60c. per $\frac{1}{2}$ oz.; \$1.00 per oz.; 6 oz. \$5.00 postpaid in U.S.

For sale only by the originator
FREDERICK S. DE LUE, M.D.
Experimental Farm Needham, Mass., Dept. 1

Cinderella Jane

Some hundred thousand people read Miss Marjorie Benton Cooke's sparkling story of "Bambi." This new book is quite as bright, but it is a better piece of work and should have a larger audience. Will you be one?

Published by

Doubleday, Page & Company
Garden City, N. Y.

FREE Write us, giving some idea of your spraying needs and we will forward absolutely free, a copy of our valuable illustrated work on Crop Diseases, also full particulars of a

SPRAMOTOR
best suited to your requirements. We make SPRAMOTORS from \$7 up. Write us to-day.
Made in U.S.A.

Spramotor Co.
5078 Erie St.
Buffalo, N. Y.



BIRDS our GARDEN ALLIES

\$3.00 for the set of three Bird Houses.

Weight 10 lbs. If by Parcel Post add Postage.

These houses occupy a unique position with Postage Stamps as they are the only things that have not raised in price.

A. P. GREIM, "Birdville" Toms River, N. J.



When it comes to Greenhouses come to Hitchings & Co.

Send for Catalogue

NEW YORK 1170 Broadway	BOSTON 49 Federal St.
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Gladioli Dahlias Lilies Phlox Iris Peonies

and other Summer-Flowering Bulbs and Hardy Perennials

VIGOROUS HOME-GROWN STOCK
OF THE CHOICEST VARIETIES

Send for Spring List now ready and receive our Fall Catalogue later

FRANKEN BROTHERS

Box 450

Deerfield, Illinois

Mastick Dahlias

are distinctly original; and famous for their wondrous beauty of form and coloring. I offer a limited number of

"Fantastique"—Orchid Paenon @ \$3.00 each
"Geo. H. Mastick"—Hybrid Paenon @ \$3.00 each

These were recommended for the "Award of Merit" (highest award) by American Dahlia Society, New York, Sept., 1917. Have other "Mastick" creations; also the best American and Foreign varieties. Catalogue.

M. G. TYLER

1660 Derby Street

Portland, Oregon.

BEGIN BEEKEEPING

It is easy, it is profitable, it is fascinating, and in this war year of 1918 it is a patriotic duty that calls on you to help save some of the more than \$100,000,000 worth of honey nectar that goes to waste annually in the United States. Your roof, your back yard, your lawn, your orchard, your garden, your farm, affords the opportunity. Write us to-day for our booklet on "Beginning in Beekeeping and Beginner's Complete Outfits." We will tell you how to begin right.

THE A. I. ROOT CO.

139 Franklin St. New York City
(For 50 years in the beekeeping business.)



Make Things Grow by Pruning

Here is a book, "The Little Pruning Book," that will help you. It is an authoritative guide to right pruning. This book will tell you how, when and where to prune. Pruning in the Flower Garden; Pruning Hedges and Vines, Fruit Trees, are among its eleven chapters of sound pruning advice.

The kind of shears you get is equally important. Pexto Pruning Shears will make pruning a pleasure. The easy grip and clear cutting are the things you'll appreciate most. You'll find Pexto Pruning Shears at your dealers. Look for the Pexto Tool displays.

Send to-day for a copy of our free circular, or send 50 cents for the book. Your money will be refunded if not satisfactory.

The Peck, Stow & Wilcox Co.

Mrs. Mechanics' Hand Tools, Tinsmiths' and Sheet Metal Workers' Tools and Machines, Builders' and General Hardware.

Southington, Conn. Cleveland, Ohio

Address correspondence to 2186 West Third St., Cleveland, Ohio



PRUNING SHEARS

Grow GLADIOLI



FLOWERS ALL SUMMER FOR \$1

There is no flower that is so easily grown and blooms so readily as the Gladiolus. The long spikes are graceful and fascinating in their great array of colors; if cut as first flower opens and placed in water, the flowers develop for a week, even to the last bud. Commence planting in April and repeat at 10-day intervals until late of June, and you will have flowers until late Autumn. Leaflet "How to Grow" included in each order.

"Homewood" Gladiolus

75 Fine Bulbs, Many Kinds Mixed FOR \$1.00 MAILED FREE to customers within fourth postal zone (600 miles) from Chicago or New York. For further zones add 16 cents in stamps.

152-page colored catalogue mailed FREE everywhere.

VAUGHAN'S SEED STORE

31-33 W. Randolph Street (Dept. G.) CHICAGO
41-43 Barclay Street (Dept. G.) NEW YORK

Get More Flowers this Season

The more light, air and moisture your vines have the better they will grow and produce blossoms and leaves. They get all they need if they have an

**"EXCELSIOR"
RUST PROOF
TRELLIS**

on which to climb and spread their glory to the elements. They are made of extra heavy, strong steel wires, held at every intersection by the Excelsior steel clamp, which is a patented feature. This gives them rigidity and strength to withstand heavy winds and sudden shocks.

Dip-galvanized AFTER making. This completely solders the whole trellis into one rigid fabric at the same time making it completely rust proof.

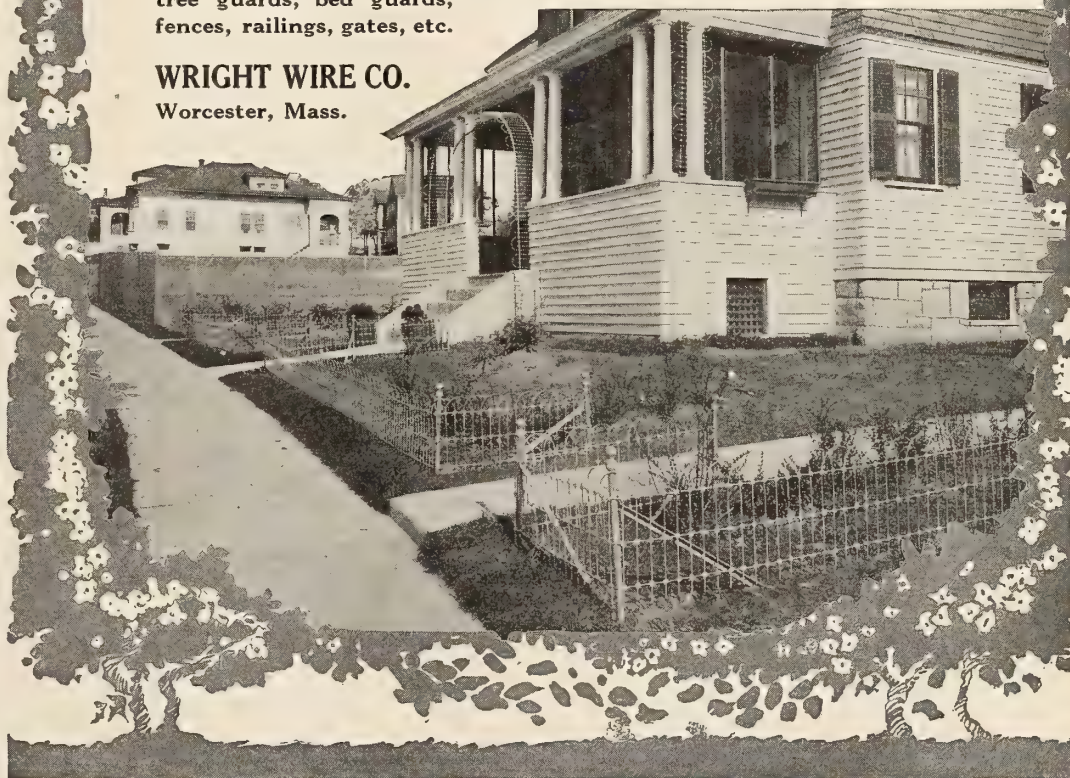
The arch at the entrance, porch-end trellis and fence shown here are all made in the same manner and of the same materials. They are truly economical necessities for the home grounds.

Interesting catalogue B mailed for the asking.

We also make a full line of Excelsior
tree guards, bed guards,
fences, railings, gates, etc.

WRIGHT WIRE CO.

Worcester, Mass.



A Pool of Water Lilies Can be Yours This Year

Water Lilies are so easy to grow that you should have them this year. My new and rare hardy Nymphaeas, Escarboucle, Vesuve, Attraction, and Paul Hariot, produce exquisitely beautiful flowers over a long period, and can be grown without difficulty.

"Water Lilies and Water Plants"

tells of the beauties of a water-garden and shows how to make one. Mrs. Woodrow Wilson, Panama-Pacific, Gloriosa, Paul Hariot and several other varieties are shown in their natural colors. Your name and address will bring a copy. Send for it.

William Tricker, *Water Lily Specialist*, Box E, Arlington, N. J.



Burpee's Seeds Grow

Beautify Your Home

Because of the War great suffering and sorrow has come into the world. So we who have made gardening our Hobby, or our Life Work, must now do all we can to gladden the hearts of the sick. Never was there such need in the world for the influence of the delicate beauty which is produced only in the flower garden!

To make it easy for you we have prepared two special collections of Flower Seeds which are listed below.

The Aster Collection will be mailed to your door for 25c., or the Burpee Box of Annuals for \$1.00. Each Collection is complete in itself, and we recommend them because of the beauty and warmth they will bring to your home.

Five of the Finest American Asters for 25c.

We will mail one regular 10c. packet each of the following Asters:

American Beauty, a most distinct novelty, bright crimson rose.

Crego's Giant Pink, a delicate shell-pink of immense size.

Queen of the Market, all colors mixed, early flowering.

King Asters Mixed, crimson, pink, rose and violet.

Semple's White, one of the best white Asters.

Five collections for **\$1.00** to separate addresses if desired, with each collection we enclose our leaflet on "**How to Grow Asters**"

Just send 25c. and ask for Collection No. 015

Burpee's Dollar Box of Annuals

We have prepared a collection of eighteen splendid Annual Flowers that cover a long season of bloom, a wide range of colors and are easily grown. This Collection, together with our Vest Pocket Guide on **\$1.00** the **Culture of Flowers** will be mailed to your door for

Calendula or Scotch Marigold, Orange King.

Celosia Plumosa, Magnificent.

Cornflower, Centaurea Cyanus Mixed.

Centaurea Imperialis, Finest Mixed.

Cosmos, Lady Lenox, a lovely shell-pink color.

Eschscholtzia Mixed, a beautiful range of vivid colors.

Gypsophila Elegans, (Baby's Breath).

Larkspur, Double Dwarf Rocket, finest mixture of colors.

Burpee's Gorgeous Mixture of Tom Thumb Nasturtiums.

Marigold, Orange Ball Double; Rich Orange Color.

Marvel-of-Peru, (Four O'Clock) Brilliant Flowers Mixed.

Fordhook Phlox, mixture of distinct brilliant colors.

Poppies, Burpee's Fairy Blush, white tipped with rosy cream.

Portulaca, Parana, New Giant-Flowered from South America.

Sunflowers, Largest Double Chrysanthemum Flowered.

New Red Sunflower, a novelty of great merit.

Burpee's Re-Selected Strain Giant Mammoth Zinnias.

Burpee's Fordhook Strain of Curled and Crested Zinnias.

Just send a Dollar Bill and ask for Collection No. U15

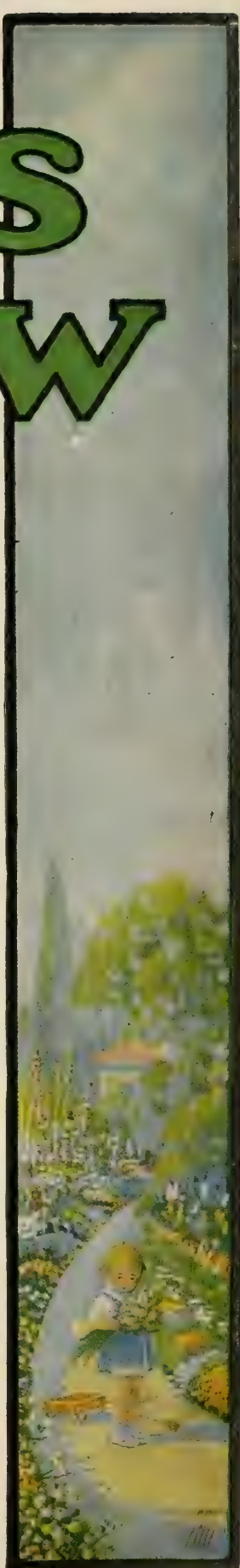
Burpee's Annual for 1918

The Leading American Seed Catalog

has been enlarged and improved and is of the greatest help to all who intend planting a garden; it contains new and reliable information about the "**Best Seeds That Grow**." 216 pages with 103 colored illustrations of the latest novelties and hundreds of illustrations of every variety of Vegetables and Flowers. It is mailed free upon request. If you want this just ask on a postal card for the Burpee Book No. 15.

W. ATLEE BURPEE & CO.

SEED GROWERS PHILADELPHIA



GARDEN

MAY, 1918

MAGAZINE

PRICE 25 CENTS

Sow the seeds of Victory!

plant &
raise
your own
vegetables

NOTICE TO READERS—
When you finish reading
this magazine place a one-
cent stamp on this notice,
mail the magazine and it
will be placed in the hands
of our soldiers and sailors
destined to proceed over-
seas. No wrapper, no
address. A. S. BURLINSON,
Postmaster-General

"Every Garden
a Munition
Plant."

WRITE TO THE
NATIONAL
WAR GARDEN
COMMISSION—
WASHINGTON, D.C.,
for free books on
gardening, canning
& drying.



"Say it with Flowers"



The Wedding!

*One Occasion When Flowers Cannot
be too Plentiful*

FLOWERS should come first in the calendar of your wedding gifts. If you know the Bride's favorite flower, the matter is easy. If you don't know her favorite, send yours. The important thing about floral wedding gifts is in their arrangement—your florist will be glad to give you many helpful suggestions.

ROSES

Are Distinctly Wedding Flowers

although there are many other appropriate and lovely flowers for bridal wear and home decorations. For graduations, birthdays, sick rooms, etc., you can always "Say it with Flowers" to fully express your sentiments.

"Say it with Flowers," a beautiful sixteen-page booklet on the etiquette, use and care of flowers, sent free on request

**Society of American Florists and Ornamental
Horticulturists**

1170 Broadway

ADMINISTRATION HEADQUARTERS

New York City

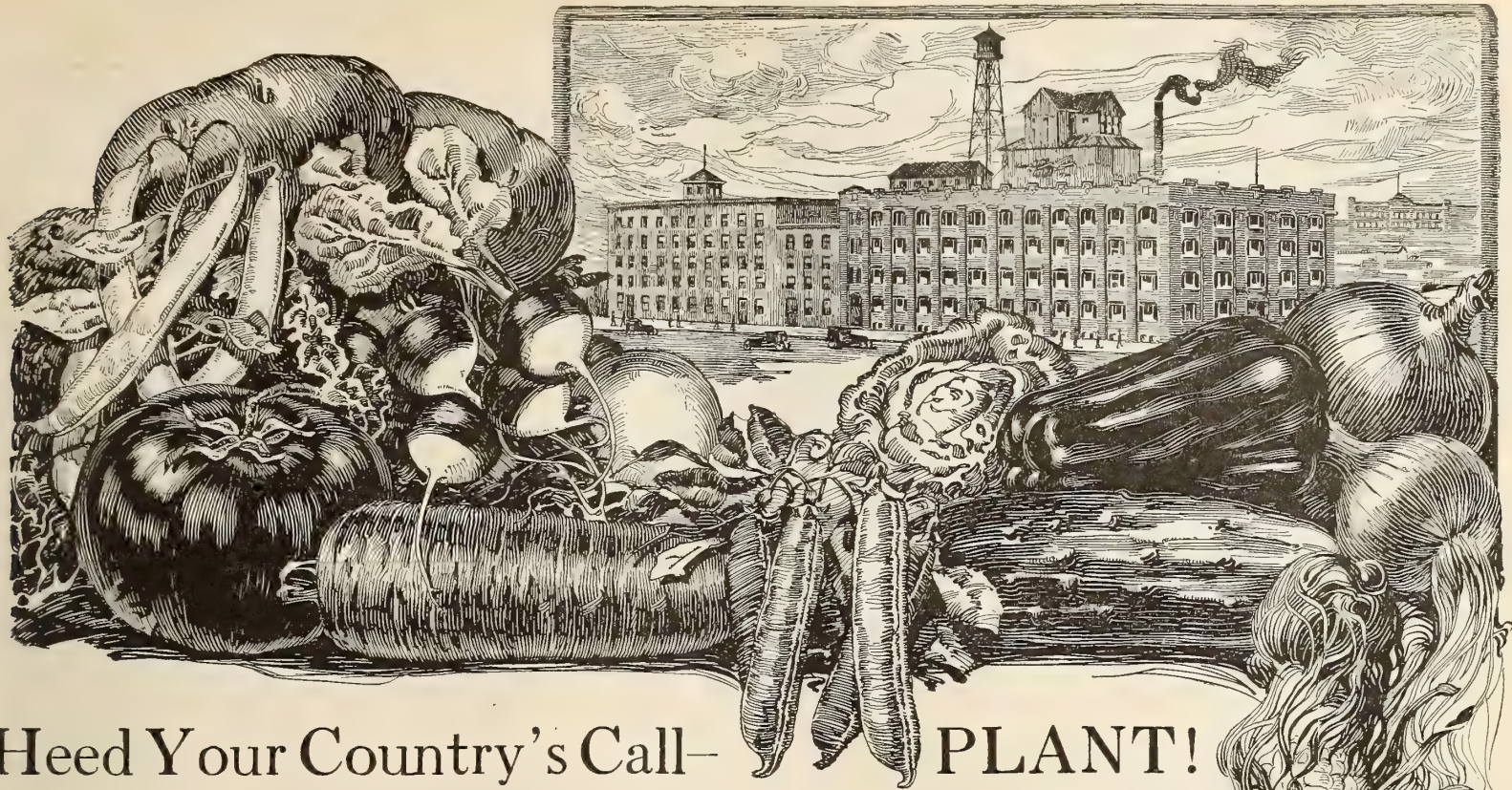
Flowers may be sent anywhere in the U. S. or Canada through the Florists' Telegraph Delivery.

Whose Birthday is in—

JUNE 1918													
SUN	MON	TUE	WED	THU	FRI	SAT							
	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28
29	30	1	2	3	4	5	6	7	8	9	10	11	12

"Say it with Flowers"





Heed Your Country's Call— PLANT!

HAVE a War Garden this year. It's a patriotic duty. In your backyard or in that vacant lot nearby. Don't hesitate because you never had a garden before. Experience is not *essential* to success. And there are people living near you who will be glad to give you advice and show you how.

It's a heap of fun, too. To see the little green shoots come up and watch the plants mature will bring a new joy into your life. The sunshine and air and exercise will mean better health. And how good the things do taste when they come right from your own garden.

Remember, too, that every seed you sow helps a soldier fight. The vegetables you raise for home use release just that much more food for our men at the front. It may seem a little part but it's helping—and it's *your* part.

But the most important thing to consider is seeds. Uncle Sam doesn't want "slack-er" gardens so don't plant "slack-er" seeds. Plant seeds

that have a reputation back of them, seeds that have proved their superiority by large yields of fine flavored vegetables—plant Salzer's Quality Seeds.

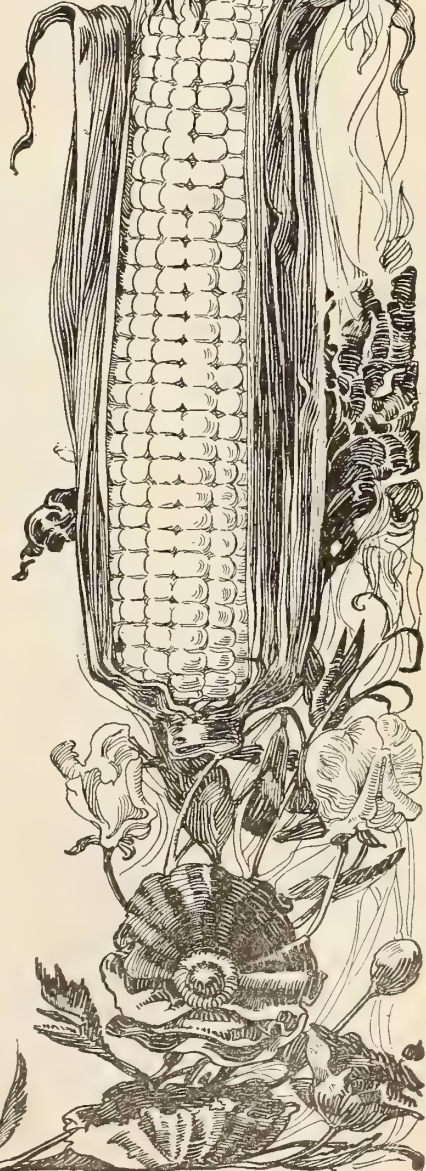
The Salzer Line of Quality Seeds comprises everything in standard and novelty seeds—pedigreed, Northern Grown strains that are the result of 50 years' practical experience and scientific methods of seed culture. Our warehouses, elevators and experiment grounds are among the largest in the world.

We make a specialty of vegetable seeds for home gardens. Our catalog shows the right kinds for your garden. It is our 50th Anniversary Catalog and we have published this special edition to celebrate the half century mark in the history of the John A. Salzer business. Your copy is ready.

Let's make 1918 a big year for American War Gardens. Make up your mind *now* that you are going to have one. We are ready to help. Send for your free copy of our new 164-page 50th Anniversary Catalog to-day.

SALZER'S
50th Anniversary Catalog
36 Pages in Natural Colors

John A. Salzer Seed Co., Box 13, La Crosse, Wis.



A LETTER TO THE READERS

From the Advertising Department

Explaining the policy that guides our efforts in building a more helpful advertising section for you

DURING the past year, it has been one of the many pleasures that come to us through letters from our readers, to have our advertising pages complimented for their constant interest and helpfulness.

Now that we are at the top of the wave of garden activity for the greatest year in American gardening, we are going to take a few moments of your time to tell our plans and policies for building these pages of advertising in the Garden Magazine, and to suggest lines of future development of their serviceability to you—at the same time calling upon you for assistance in reaching this ambition, for our mutual gain.

First, the Garden Magazine, from cover to cover is built solely for the reader. Our whole aim, at all times, is to give you each month the information and the suggestions that are timely, helpful, and authoritative.

It is unusual for the advertising department of a magazine to call its readers into conference on its plans, but we believe that the very intimacy and mutual enthusiasm for gardening that exists among us all—reader, advertiser, and publisher alike—calls for an understanding of our ideals for the further development of gardening in America.

As the Garden Magazine holds the position of leadership among publications in this country in its field, and is the only one of National circulation treating gardening as its only interest, we believe it is safe to say that this magazine represents American horticulture more sincerely than does any other publication.

Built for the reader—and for the furtherance of horticulture in this country—gardening in all its phases—it is natural that the superstructure should rest on a foundation stone of *service*, for service is the basis on which any publication or business must build to deserve success—and only in proportion to the service it renders does it gain success.

The advertisers in these pages month after month, represent the commercial side of horticulture in this country.

You, good reader, are one of the people upon whom the development of gardening and horticulture in this country depends—while we, as publishers of the Garden Magazine, have the enjoyable occupation of furnishing a medium for the spread of horticultural knowledge—a vehicle by which, with your permission and interest, we are enabled to carry the news of reliable firms who supply the means for the furtherance of your gardening ambitions.

We aim to work out the policy that *the advertising pages are important and helpful to you in such degree as they are of service to you*; the accomplishment of that purpose depends upon the understanding our advertisers have of what you wish to see in these pages, and the ability with which they make their announcements interesting to you.

In the past two years, we have been writing for the assistance of our advertisers, a Garden Magazine Bulletin (more recently named "Horticultural Advertising"). In this we have endeavored to interpret to our advertisers the wants and needs of many thousands like you.

The changes you have noticed in the appearance and quality of the advertisements is in part due, we believe, to the better understanding these firms have of the kind of information you want. And, of course, the kind that proves profitable to them—for in the long run their profit depends wholly upon their ability to serve you.

Now, without going into further detail at this time, do you not see the relation that has sprung up among us? We are all dependent upon one another for mutual help.

May we ask you at this time to help us in giving you a group of advertisements even *more* in accord with your needs than those which are now put before you.

Will you please write to the advertiser, or perhaps better still, write to us, and suggest which advertisements are *really helpful* to you—and which ones lack qualities that you believe they should contain?

If you'll do this, we will acquaint advertisers with your desires, and help them to give you more helpful and interesting advertising. You will be benefiting yourself as well as every other reader because you will be making the magazine better, and you will receive our sincere appreciation for your kindness.

Some may say, "Why should I help the advertiser?" The only answer to that is that as you, or we as your publishers, help the advertiser to present the kind of advertising which interests garden enthusiasts, by just so much do we increase the effectiveness of the Garden Magazine and aid the cause of American horticulture.

Will you help? Will you write us—at length and as frankly as we have written you?

THE ADVERTISING DEPARTMENT

Address The Advertising Department
The Garden Magazine
120 W. 32nd Street, New York



Underground for Lawns

**Weather too often
"passes dividends"**

It is useless to count on the "weather man" for dividends of rain. You can assure your own rain, at any time, with



Overhead for Vegetable Gardens

Cornell

Systems of Irrigation

You can be certain of lawns of rich, green beauty. You can count on productive gardens of vegetables and flowers.

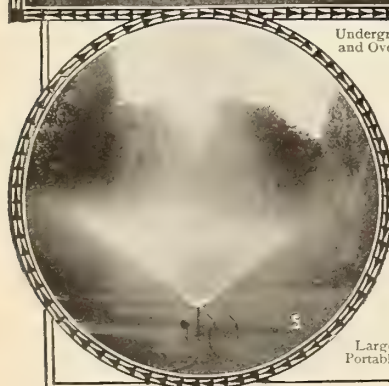
The very maximums of economy, simplicity and efficiency are given by Cornell Overhead and Underground Irrigation systems, equipped with the patented, adjustable Rain Cloud Nozzles. Inexpensive in cost of water, time and labor. True conservation. Installed at any time. No injury to lawn or garden. Can be applied to any area, including portable sprinkling apparatus.



Overhead for Flowers



Underground and Overhead



Large Portable

Illustrated Booklet Free
W. G. CORNELL
COMPANY
Plumbing, Heating,
Lighting

45 EAST 17th STREET
NEW YORK CITY
Railway Exchange Bldg., Chicago
Munsey Bldg., Baltimore
334 Shawmut Ave., Boston
Leader News Bldg., Cleveland
Commerce Trust Bldg., Kansas City
923-12th St., N. W., Washington
86 Park Place, Newark

Bobbink & Atkins



Ask for Catalog

It describes every plant and tree necessary to beautify your Gardens and tells how to plant.

Visit Our Nursery

You will actually see the high Standard we maintain on our 500 acres. The best in HOME-GROWN ROSES, TREES, SHRUBS and PERENNIALS.

Plant Now

Keep Your Home Restful and Beautiful

Rutherford, New Jersey



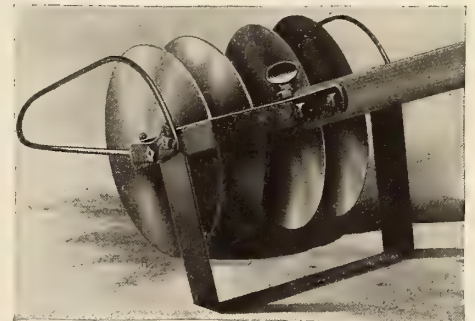
"The Proof of the Pudding—"

Does this garden look good to you? Of course it does, and we'll tell you whose it is! It's our own little "private" business garden which we plant year after year, and in which we make it our business to find out just how Leonard's seeds "behave" under homegarden conditions. Looking back upon many years of conscientious records, we are satisfied that Leonard's Seeds are *Seeds with a Conscience!* Choose them for *your* midsummer war garden and let them prove, in a measure, why

Leonard's Seeds and The Perfection Cultivator are The Business Garden Combination

By "business" garden we mean *your* garden, if you really mean business! The "Perfection" Cultivator, too, means business, as we have proven to our satisfaction for many years.

It kills weeds, aerates soil. It *SAVES*—moisture, soil-fertility, stooping. The special leaf lifters shown alongside *save plants* from injury. It *saves its cost* the first season in *labor saved* and increased crops and is substantially built to serve for years.



Any of 3 sizes, \$3.50 each.

No 1, with two discs, on which 6 inch or 7 inch knives may be used, will work rows, 9 to 11 inches wide.

No. 2, with four discs for use with 7½, 8¼ and 8¾ inch knives, will do the work between 11 to 14 inch wide rows.

No. 3, with four discs, and 10 or 11 inch knives, works 13 to 16 inches wide.

Satisfaction guaranteed or money refunded. Order to-day—don't fight weeds the old-fashioned way.

Thousands of Leonard Seed Stores all over Country or Headquarters will supply you

Some merchant in *your* town conducts a Leonard Seed Store. Write us to-day to get his name. If there is no Leonard dealer handy for you, we will see that you are supplied. Descriptive circular of "Perfection" Cultivator free, as is our catalog of seeds for present and summer planting.

Leonard Seed Co., Headquarters: 226-30 W. Kinzie Str., Chicago
Warehouses throughout Illinois and Wisconsin
Chicago Stores 10912 Michigan Avenue
810 W. Randolph Street, 4845 Milwaukee Avenue



Every Patriotic Citizen is Pronouncing Condemnation Upon the Slacker

IT TAKES years to grow fruit trees to maturity. We are eating fruit from trees planted by others. It takes the time of two generations of men to bring shade trees to perfection. The trees we so much enjoy in our parks and along our streets were planted by some one, not only for themselves, but for future generations.

What shall be said of those who enjoy the labor of others; but who will not do their part to pass these favors on to those coming after us?

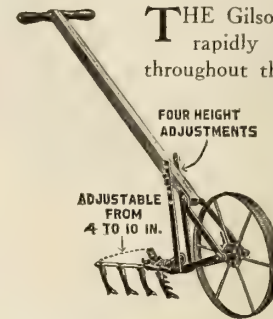
Don't Be a Slacker, Plant Trees

Adorn your home-grounds so that the place will look attractive. Now is the time to get busy. For a quarter of a century we have been getting ready to supply your needs, directly from producer to consumer—no middleman's profit. We employ no salesmen, but sell direct to the consumer. We guarantee to give you "Value for Value"—that's our motto.

We cannot bother to enumerate varieties and give prices. It's all in our 1918 Catalogue. Sent only for the asking.

The Bay State Nurseries
678 Adams Street
North Abington, Mass.

When Buying Tools, Say: "Gilson's"



THE Gilson tools described below are rapidly gaining in popular favor throughout the country. They serve a wide variety of purposes and do the work so well that they greatly add to the pleasures of gardening.

Liberty Wheel Cultivator

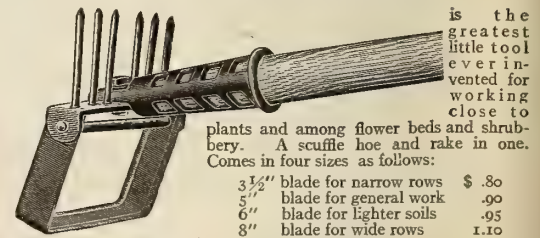
makes short work of weeding, cultivating, weeding,—whatever you happen to do in the garden. Can be used for cultivating between rows or straddling the plants to cultivate on both sides as the operator desires; is adjustable to suit the operator. Price complete, \$3.00.

as wheelhoe or hand- cultivator.

The Liberty Cultivator is easily and quickly adjusted to any width, from four to ten inches. By simply loosening two wing nuts, arms, as shown alongside, are moved. For straddling the rows, the centre tooth is quickly detached, making possible the cultivation of both sides of row in one operation. See the Liberty Cultivator at your dealer's, or send to us, direct. Price, (with five-foot polished ash handle) \$1.50.



The Gilson Weeder for that flower garden



A scuffle hoe and rake in one. Comes in four sizes as follows:

3 1/2"	blade for narrow rows	\$.80
5"	blade for general work	.90
6"	blade for lighter soils	.95
8"	blade for wide rows	1.10

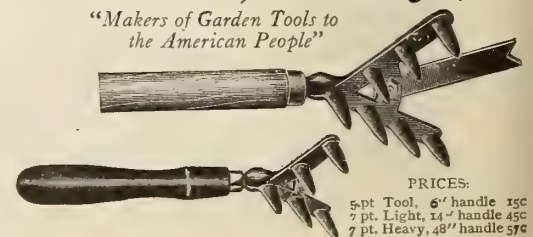
Gilson Scratch Weeders as shown below

are handy tools to putter around flower beds, frames and vegetable gardens. The teeth are entirely self cleaning. They will not clog in moist soil. See pictures and prices below.

Send to-day for illustrated, descriptive circulars of
Gilson Garden Labor Savers—Free!

J. E. Gilson Co., Port Washington, Wis.

"Makers of Garden Tools to
the American People"



PRICES:

5-pt. Tool,	6" handle	75c
7 pt. Light,	14" handle	45c
7 pt. Heavy,	48" handle	57c

Aphine Kills Plant Lice of Many Species!

The Recognized Standard Insecticide

Aphine, Fungine, Vermine
For Sale at

All Good Seed Stores

They are put up in various sizes to meet the requirements of different types of gardeners. All are guaranteed to do effective work. For further particulars apply to manufacturers.

Don't let Aphid (Green Fly) thrips, soft scale, currant worm or cabbage slugs deprive you of the fruits of your garden efforts. Fight them with **Aphine**. Simply dilute and apply as per directions on can. It will promptly rout the enemy.

Fungine is a specific remedy against mildew and blights affecting fruits, flowers, and vegetables. Does not stain foliage.

Aphine Mfg. Company,

Vermine will positively destroy plant enemies beneath the soil. Sure death to maggots, eel and angle worms. Saves houseplants, too.

Madison, New Jersey

The Response Proved It

*Unusual nursery catalogue
gets unusual welcome
from readers of
Garden Magazine*

THE many enthusiastic letters received by us since we announced the publication of our new book "Beautiful Home Surroundings" has proven that the need of such a book is realized by a large number of garden lovers. The first edition already proves how interesting a nursery catalogue can be made.

With all the catalogues that have been published, it seems the overwhelming idea has been to impress the reader with the number of different items offered for sale. Many times the descriptions were hackneyed, the illustrations worn out, and the whole, dull and uninteresting.

We started out to build a book that would be helpful, interesting, and attractive. We secured a large number of good photographs, made up for the most part of plantings we ourselves had completed and which visualized possibilities of different types of nursery products, and then we built this book so these photographs could really help the reader in planting his or her own home surroundings.

The book is ready for distribution. Already a large number of readers of Garden Magazine have accepted our invitation to write for it, but we feel that it is a book of such value that it should be in the hands of every reader.

"Beautiful Home Surroundings" Is Yours for the Asking

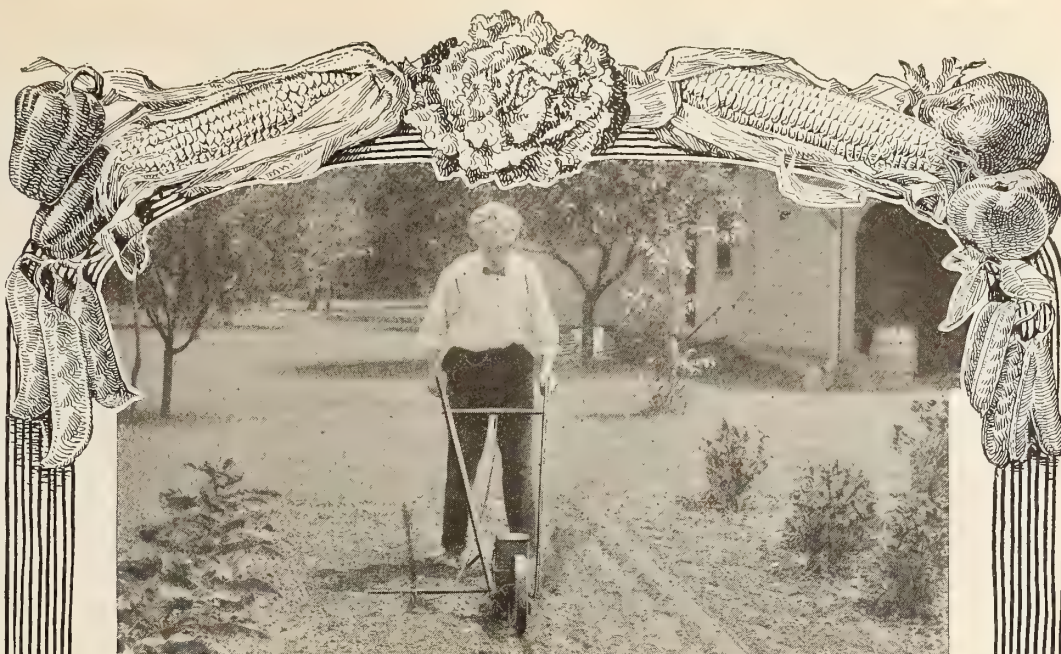
This book has already proven it is to be not only unusual, but valuable,—in that it presents the very information you want, without superfluous detail. It will be a great help to garden owners. Its unusual contents, its apt illustrations, all combine to help you in selecting the right nursery stock for your home grounds.

Don't place your order for nursery stock until you receive a copy. It will be mailed on request. Write for it to-day.

FRAMINGHAM NURSERIES

Established since 1894

Framingham, Mass.



Grow Your Own Vegetables

There is greater need this year than ever to help increase the food supply. Plant and cultivate a garden, and thus do *your* share. You'll cut down living expenses, too.

You save time, labor, money, and get bigger and better crops by using

Planet Jr. Garden Implements

No. 25 Planet Jr. Combined Hill and Drill Seeder, Double and Single Wheel Hoe, Cultivator and Plow sows all garden seeds from smallest up to peas and beans, in hills or in drills, rolls down and marks next row at one passage, and enables you to cultivate up to two acres a day all through the season. A double and single wheel hoe in one. Straddles crops till 20 inches high, then works between them. Steel frame and 14-inch steel wheels. A splendid combination for the family garden, onion grower, or large gardener.

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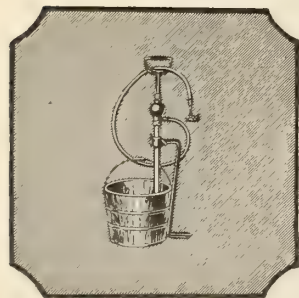
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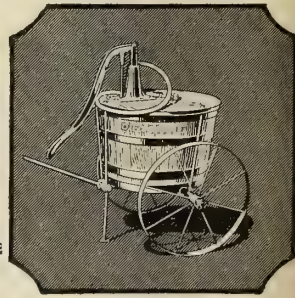
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THE GARDEN MAGAZINE

MAY, 1918

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LEONARD BARRON, EDITOR

Published Monthly, 25c. a copy. Subscription, Two Dollars a Year.
For Canada, \$2.35; Foreign Countries, \$2.65.

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DOUBLEDAY, PAGE & COMPANY
GARDEN CITY, N. Y.

CHICAGO: Peoples Gas Bldg.
LOS ANGELES: Van Nuys Bldg.

BOSTON: Tremont Bldg.
NEW YORK: 120 W. 32nd St.,

F. N. DOUBLEDAY, President
ARTHUR W. PAGE,
HERBERT S. HOUSTON,
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We *knew* that, in due time, the Government would recognize the immense possibilities of children's gardens. We *knew* that the encouraging of school and community gardens would be the next logical step in the Government's programme of food production. A year ago, we started work on a totally "different" sort of a garden book, entitled

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Every Member of The National Food Garden Commission Should Get a Copy—and May Have It—FREE!

It will prove of inestimable value in pointing the way to concerted efforts in food gardens. Every commanding officer on the country's garden line of national defense will welcome this brochure as a powerful aid to garden victories. We stand prepared to supply copies as well to local chapters of The Garden Club of America. "Lest you forget"—Write TO-DAY.



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"Garden Magazine"
April, 1918

Most assuredly; but we must act promptly. Each individual reader of this magazine should consider it a solemn, patriotic duty to plant as many fruit trees, plants and berry bearing shrubs this month as space permits. Bear in mind that many dwarf forms of fruit trees make possible the cultivation of the "orchard" fruits in even small space as is explained elsewhere in this issue. This spring the supply of young fruit trees in this country is abundant. But it has taken years to work up this supply, with France furnishing most of the seedlings or seeds from which to grow the seedlings. That supply has definitely ceased. Another year may see a decided advance in the cost of fruit trees. Are you prepared, as an economy measure, to plant yours this spring—*now*?

Is good advice always for the other fellow—and not for you? Why are you content to see others pick the juiciest fruits imaginable from their own backyards while you pay higher and higher prices for worse and worse store-fruit? Did you ever once have the fun of eating a big red  or a succulent  picked from a Hicks ?—Or watch the kiddies with their great big   and watering mouths as they started to climb a Hicks fruit-tree? Did you ever eat cherry pie made from Hicks cherries? You've missed half the fun of life if you haven't! What good excuse could you have anyway for not growing fruit in your own yard or on your lawn? Not enough room? There isn't a suburban lot big enough for a  that isn't big enough for a few fruit-trees. Give up the idea that you must have space set aside for an orchard. You can plant flowers and vegetables in between rows of    and  trees, and vines along the fence or garage wall, without requiring a bit of extra space! No time to bother with it? Any tot from six up, or any hired man, can plant and tend fruit    with the instructions we give. All the time you need is to send us your order and check. Don't know what to order? You can leave that to us too if you will give us the size of your lot and the kind of fruit you like best. Expense? Good peach trees are as cheap as 25 cts. apiece. Compare that with the peaches you will get and keep on getting from it—year after year! And look at these special offers:—

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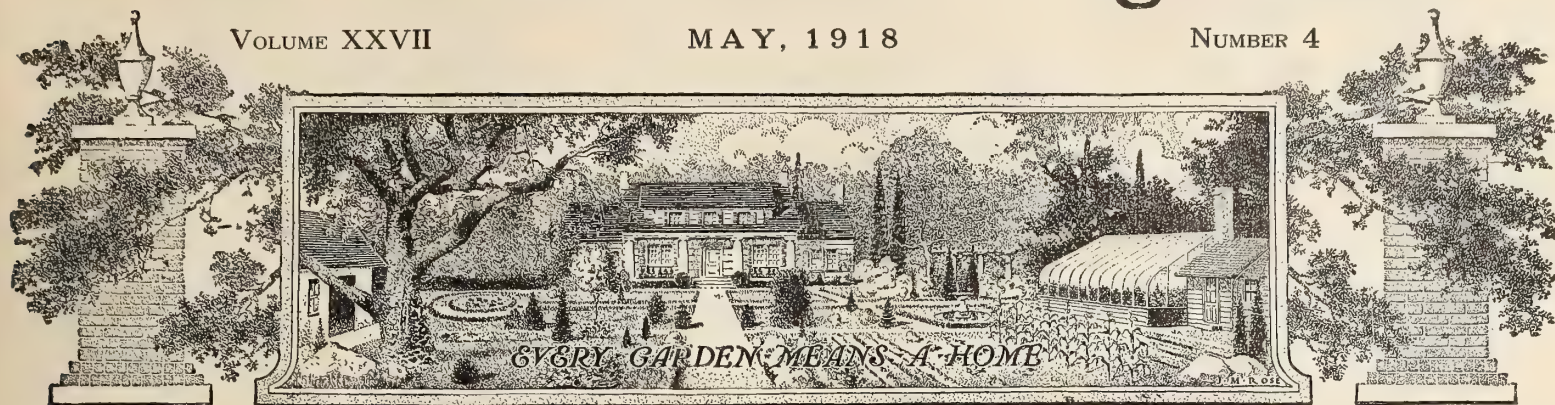


The Garden Magazine

VOLUME XXVII

MAY, 1918

NUMBER 4



AMONG OUR GARDEN NEIGHBORS

America's Awakening

IT WAS exactly a year ago, in the issue of May, 1917, that THE GARDEN MAGAZINE carried to its readers certain parts of the President's electrifying appeal of April 15th containing the memorable and the much quoted sentence "Everyone who creates or cultivates a garden helps, and helps greatly, to solve the problem of the feeding of the nations."

The retrospect is instructive and inspiring. In the twelve months that have elapsed since that time, home (and as it is sometimes called backyard) gardening in America has been given such an impetus and has gained such momentum that, whereas a year ago it used to be said (with much truth) that gardening was nothing but an occasional pastime to the average American, it is to-day a serious avocation. To-day the man or woman who does not do some gardening is the exception, rather than the rule.

Home gardening in America has found itself. To be known as a gardener to-day is to be recognized as one who is rendering a certain measure of service in the national need. The machinery by which this radical change has been wrought has been but little realized. More than a month before the President's appeal, a Commission now known as the National War Garden Commission was organized under the presidency of Mr. Charles Lathrop Pack of Lakewood, N. J., and Mr. Percival S. Ridsdale of Washington, D. C., as secretary. The other members of the Commission are: Mr. Luther Burbank, Hon. P. P. Claxton, U. S. Commissioner of Education, Dr. Charles W. Eliot, Dr. Irving Fisher, Mr. Fred H. Goff, Mr. John Hays Hammond, Mr. Fairfax Harrison, Hon. Myron T. Herrick, Dr. John Grier Hibben, Mr. Emerson McMillin, Mr. A. W. Shaw, Mrs. John Dickinson Sherman, Capt. J. B. White, and Hon. James Wilson. Since then the well directed energies of the president and secretary, with their associates on the Commission, have indeed given the great public an entirely new conception of the resources and capacity of the home garden, or as it is now appropriately called, the war garden.

Elsewhere in this issue the method of operation by this Commission is discussed by its official representative.

Those of us who have always been more or

less believers of the ultimate arrival of the garden as a national institution now find ourselves overtaken, overwhelmed, and passed by the on-rush of recruits, which is very largely due to the stimulus given through the National War Garden Commission. This Commission is a splendid illustration of what such a thing can be. It has worked along original lines, coöperating freely with every and any organization or individual that was in a position to bring influence to bear in increasing the interest in garden work. Its function is to give "Service." Where organizers are needed it sends efficient ones; where instruction is required it sends the best available; where general literature is desired it sends a variety which answers all needs. Its function being "Service" the Commission has specialized as far as congested express and mail lines will permit it, in giving immediate response to each and every demand for its assistance by individual, community organization, corporation, city, county or state.

Furthermore, and most important, it has sent its representatives throughout the country stirring up interest in garden planting wherever it found apathy or lack of local endeavor, and by leading the way, and furnishing instruction it has, in its little more than a year of life, started the garden "bug" from coast to coast.

The Commission has had no axe to grind and has looked for nothing but results, and its members, led by their active and energetic president, have given their means and their

endeavor as a patriotic contribution to their country's war time needs.

To the public at large the Commission itself has not been so evident as the results of its work. Its book "War Vegetable Gardening and the Home Storage of Vegetables" (1918 edition) which has been freely distributed this year has already reached a total of millions of copies; and in its 32 pages presents a veritable multum in parvo of practical management for the small garden. Besides distributing numerous pamphlets and leaflets it has also issued a news service for the daily and weekly newspapers which have responded nobly by generous use of their space in printing special articles on gardening and daily lessons on how and what to do.

In addition to the gardening manual just referred to, other important publications of the Commission include: "How Home Gardeners Can Help Feed the Army," "Daylight Saving, War Gardens, and Army Food," "Grow War Munitions at Home," "Slacker Land and Food Facts," "War Vegetable Gardening by Communities and Neighborhoods," "War Gardening by Corporations." In addition, a manual on Home Canning and Home Drying of Vegetables and Fruits, with directions for pickling, fermenting and other forms of household conservation—a freely illustrated, practical handbook—is also now ready for distribution, for, following the garden planting campaign the Commission gives all its force and influence to the conservation of garden products by canning, drying, storage, and in other ways.

The immense importance of the garden as a factor in national service is even as yet hardly realized. Last year, according to official figures, it is reported that the home garden movement added to the food production of the country an amount worth \$350,000,000. Every pound of food grown at home and consumed at home liberates an equivalent in the ordinary channel of commerce. Three or four pounds of potatoes, parsnips, onions, or sweet corn save a pound of beef or a pound of bread. Every leaf of lettuce, every stalk of celery, every bunch of beets raised on hitherto unproductive land is just so much direct contribution to the nation's output.

Beans and peas are rich in proteins. One pound of dried navy beans contains 1605 calories—almost the equivalent of a pound of

BY arrangement with the National War Garden Commission, THE GARDEN MAGAZINE offers its readers any of the following publications free:

- ¶ War Vegetable Gardening, 32 pages, profusely illustrated.
- ¶ Canning of Vegetables and Fruits, 32 pages, profusely illustrated.
- ¶ Grow War Munitions at Home.
- ¶ War Gardening by Communities.
- ¶ War Gardening by Corporations.

Write for them to National War Garden Commission, Washington, D. C.

wheat flour, 1635—and more than in a pound of round steak, 890, or of sirloin, 975. A pound of potatoes contains about 400 calories, parsnips 300, green corn 460, onions 220. Six ounces of potatoes will save $1\frac{1}{2}$ ozs. of flour. With potatoes freely used we can get along with less bread.

The stimulus to vegetable production given by the National War Garden Commission is a vital factor in the food problem of the United States, and the food problem of the United States is the pivot on which turns the present stupendous problem of the world; for "Everyone who cultivates a garden helps to solve the problem of the feeding of the nations"

Save Everywhere!

IN THE end it is not what we grow, or make, that counts, but rather what we *save*. Larger gardens help little, unless the extra crops are carefully saved or put to use where the supply is lacking. To make bigger gardens, to use more seeds and then lose the benefits of the greater attempts by letting food go to waste in the garden, would be defeating the very object of the effort. More than ever before, we must *save* at the start and economize in the end. In the garden, saving should be practised in connection with every little act and object.

Save Seeds. In the very beginning seeds must needs be handled with care, and sown with precision, spacing them properly in the row to give every seed a fair chance. Do sowing only under soil and weather conditions that will insure safe arrival of the seedlings above the soil.

Save the Seedlings by giving them immediate and proper care.

Save Moisture by starting cultivators going at once. There is no greater waste than sunbaked soil which permits the moisture to escape.

Save Fertility. To thoroughly manure or fertilize the ground, and then to let the weeds choke the cultivated crop, is a waste. The one sure way to a bountiful garden is to hoe, hoe, and hoe again, whether with a wheel cultivator, a hand cultivator, a common hoe, or a rake.

Save the Plants that bear the crops. When the first common garden butterfly appears, prepare to fight the worms by destroying the eggs through either spraying or dusting. As soon as the petals drop from the fruit tree blossoms, take out an insurance policy on the coming harvest in the form of timely spraying. (See page 191 of this issue.)

Save the Crops! Before the plants or trees finally yield the fruit of your efforts, be forehanded with preparations to take care of the harvest. Don't wait until July before ordering your canning outfit or preserving jars. Don't wait until the vegetables become overgrown or old or tough and stringy. If you cannot take care of the crop as it comes, place it where it can be taken care of. Take advantage of neighborhood canning kitchens and cooperative community dehydrating plants where food may be saved by proper handling; also, remember the less fortunate ones in the cities who cannot grow for themselves things that you may produce in surplus quantities.

Save Labor. Withal, these various forms of saving have to be practised with an eye to strict economy in labor. Remember: "our object is to win the war." Don't keep at mere pulling of weeds an able-bodied man who can help build ships, run a motor truck, or

build a barrack. Press into service the many labor-saving tools and appliances, which stand for short cuts in gardening.

A Handy Trellis for Viney Vegetables.—Poles for lima and other climbing beans are not always procurable and when used have their disadvantages. A cord-and-wire trellis, shown in the accompanying photograph, has been so satisfactory for me that I am sure others will be interested in knowing about it. As can readily be seen, two wires were strung between posts, one at the ground and one about six feet above. Four-ply soft brown cord was run back and forth over these wires about one foot apart. When the row was completed, two cords were woven lengthwise of the row to strengthen the structure.



A practical trellis. Two wires run lengthwise of the row, one at the ground, one about six feet above. A strong soft cord is run back and forth over these wires

The posts were staves from lumber cars and cost just ten cents apiece. The cord used cost about twenty cents a ball and one ball made about twenty-five feet of trellis. Before stringing, the balls were immersed in melted paraffin which thoroughly saturated the string and should add to its lasting qualities. Brace poles were set a little out of the row so as not to interfere with the plants. When this trellis is made four feet apart between the rows and beans are planted a foot apart in the row, the plants run a race to see which can cover the most of the trellis. Being spread out, they thrive better and yield more than when the same number of plants are crowded on poles, to say nothing about the greater ease of gathering. This type of trellis in various dimensions is well adapted to peas and tomatoes, as well as beans; and from the way that a neighboring row of cucumbers took to the strings I am going to try it for this plant another year.—Donald F. Jones, Cambridge, Mass.

Quality in Rhubarb.—In the April GARDEN MAGAZINE, M. G. K. says rhubarb raised from seed can not be depended upon as there are too many varietal differences. He should try New Winter Rhubarb. I sowed seed a year

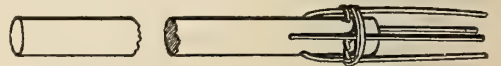
ago, May, and by September had a most excellent stand and all we could possibly use. This all from a small packet of seed. The stalks are exceedingly fine quality and remained good until after frost. Just now, April, they are again making rapid growth and will be ready for use in a few days. The flavor is exceptional and much less sugar is required than with other varieties I have tried.—J. I. Billman, Mo.

Preserving Wooden Labels.—In the case of labels used for the garden, or other purposes, the following plan is to be highly recommended as certain to preserve the wood. The first step is to soak the pieces of wood for a whole day in a solution of copperas (sulphate of iron). After this, put the wood at one side to dry. Then place in lime water for twenty-four hours. The outcome of this treatment is the formation in the wood of sulphate of lime (gypsum) a salt that is highly insoluble. This impregnates the wood to such an extent that a rapid destruction of the labels is impossible. Thin wood treated in this manner has been fully exposed to the weather for two years without showing the least change.—S. Leonard Bastin.

Use Postal Cards?—We have this spring received several postal cards, adequately addressed, *but with the back blank*—no message at all! This will we hope serve as an explanation why apparently no notice has been taken of such communications. Better use a letter-head and a sealed envelope in future.

Prefers the Easy Way.—I was very much interested as well as amused by Mr. Max Schling's characteristic letter in the March GARDEN MAGAZINE regarding the cultivation of Hunnemannia. Notwithstanding all that Mr. Schling says, I prefer (and I think most amateurs will agree) to try and grow this beautiful flower again this year under the same method I used last year, viz. soaking the seeds and planting them in the place where they are to remain. I have never had much luck in transplanting any of the Poppy family and see no good reason why so much work as suggested by Mr. Schling is necessary—possibly the flowers might be somewhat earlier, but as I do not want mine until September I am satisfied to follow my own method. However if this discussion will lead to a more general use of this wonderful flower, I shall feel entirely satisfied with the results and criticisms.—Frank Presby.

Tent Caterpillar Destroyer.—A very effective instrument for destroying the Tent Caterpillar may be easily made as follows: Procure a long, stiff and light pole, drill two holes four inches from one end and at right-angles to each other, put through each hole a



piece of springy brass wire, stiff enough to keep its shape, and about $\frac{3}{16}$ inches thick and 16 inches long. Bend each wire down on either side of the pole so that the ends will project about 4 inches beyond the end of the pole; an inch from this pole-end fasten each wire with a staple, sharpen the ends of the wire, and the implement is ready for use. It is as well to equip a shorter stick for low-hanging nests; a pole made from an old rake-handle will answer. Thrust the points of the wires into the nest, twist it around and you will find that the majority of the worms will

TRAIN NOW—THE WAR WILL DEPEND ON THE KIND OF GARDEN YOU HAVE NEXT SUMMER!



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come off wrapped up in the nest-webbing. Brush this webbing, etc., into a large tin pail, the contents of which may be burned or otherwise destroyed as the gleaner may prefer. I have found this Catcher far preferable to the usual way of burning the nests, which latter method injures the trees and is also dirty and troublesome to use.—*Wm. H. Rockwood, New York City.*

Coboea Scandens as a Porch Climber.—During the last three years I have been delighted with *Coboea scandens* as an annual climbing vine for my porch. The seeds were started and the plants grown for me in two inch pots in a cool greenhouse (the Carnation house of a local florist) though I could have grown them in the dwelling without trouble. They were set out the latter part of May—



The Cup-and-Saucer flower (*Coboea scandens*) is a quick growing annual vine for the porch. Set out plants late in May

three of them by the porch pillar. During July they began to blossom and continued until killed by frost in October. One year I had the greenish-flowered variety. But this I consider inferior to the one that starts greenish and turns purple within a couple of days. As the flowers are as large as the large trumpet *Narcissus* they are very striking. This is one of the quickest, most satisfactory annual climbers I have ever grown.—*M. G. K.*

The Soy Bean.—Attempts of the Department of Agriculture to introduce the Soy bean into domestic use are meeting with some success in a commercial way. In 1916 three large canneries were known to be using Soys in certain brands of tinned baked beans. A bulletin issued September, 1917, speaks of "the increased use of this bean for human food" resulting in "an enormous increase in the acreage." The same bulletin says that "Soy beans yield more seed per acre and are more cheaply harvested than any other variety of bean" and they are very rarely attacked by weevils. When we recognize that Soy beans contain 35 per cent. of protein and 18 per cent. of fat we realize their very great possibilities for human food. The fact that they were, in November, 1917, available as first grade seed beans at 7½c. per lb., while the inferior Navy bean was selling in retail groceries at 25c., does not diminish their significance. I have served cooked Soy beans, both black and white varieties, to at least 50 people in the last three years, and have yet to find any one who does not like them. Consequently, last spring I bought a 5 cent packet of seed, in order to have some plants on exhibit in our college botanic garden. About ⅔ of the packet, however, found a place in my own home garden. Planted in May, about 6 inches apart in rows 3 feet apart, they grew splendidly. The bushes attained a height of about 2 ft., with a spread of about 18 inches. This, was also on the poorest soil I could find. The flower of the Soy bean is small and almost hidden by the large hairy trifoliate leaves. But along in August the bushes become heavily draped on all the branches with the short bristly pods. As these ripened, there was a stage just before drying, where the full grown beans could be easily shelled out. Knowing how delicious are all the ordinary bush beans when boiled at this stage, I sacrificed a medium large Soy plant. It bore 167 pods, containing a total of 418 beans, measuring just ½ pint. They were easily cooked, and the result was highly satisfactory. But think of 418 beans from a single parent! And Robbins says 600 to 800 may be expected. Truly, no other bean is so prolific. My total crop shelled out four pounds of dry beans. The variety I raised was a large white one of early maturity. The bureau of foreign seed and plant introduction lists about 75 varieties in many shades and sizes as available for experimenters. It should, perhaps, be said that the dry bean, after 24 hours soaking in water, cannot be cooked entirely soft by ordinary methods. It remains crisp, but becomes very tender and brittle. If you want your beans to become completely softened, they require a soaking of two to four days, or a pressure cooker. The high fat content of Soy beans makes it undesirable to cook pork with them. This fact contributes to making the Soy beans the most economical as well as most nutritious meat-substitute in all our lists of foods.—*Henry S. Conard, Grinnell, Iowa.*

The New Deutzias.—I have read with much interest Mr. McFarland's article in *THE GARDEN MAGAZINE* for February, but I cannot refrain from remarking that he could have saved much printer's ink, if he had had his plants rightly named, because then he would have had no opportunity to discourse at length on this terrible name *D. Schneideriana laxiflora*. The fact is that his large-flowered Chinese *Deutzia* is not that species, but *D. discolor*. I do not know how he got hold of that name; he states that he received the plant as Wilson's No. 570 which was determined as *D. discolor*, as stated in *Plantae Wilsonianae*. The photograph struck me at first glance as having no resemblance to *D. Schneideriana* which resembles *D. scabra* and has an elongated rather loose inflorescence, smaller flowers with narrower petals and very short triangular calyx-teeth, and none of these characters can be found



Soy Beans. Earlier maturing variety at right is the kind for the home garden

in the pictured plant. The English name used "Large-flowered Chinese *Deutzia*" is also not fortunate, as there is a *D. grandiflora* from northern China, and one might suppose that this plant was meant.—*Alfred Rehder, Arnold Arboretum.*

Golden Bell Flower Buds Killed.—Every year I force in my house a lot of sprays of *Forsythia*. This year no flowers but plenty of leaves; and I have been told by several people that this has also happened with them. Can it be possible that the awful cold of last winter has blasted the flowers? What will our spring be without the *Forsythias*? I hope that I am wrong in my conclusions and that we shall have these beautiful bushes in all their glory as usual. A few short weeks will tell.—*Frank H. Presby.*

—No doubt your surmise is correct, and the blame must be put on the weather of winter. It is of interest to note in this connection that the flower buds of different species of *Forsythia* are frequently killed in the Arnold Arboretum, whereas those of the several hybrids are more resistant to cold. This was specially noted in the winters of 1915-16, and 1916-17 when the spectabilis form of *F. intermedia* alone came through with a real display of bloom.—*Ed.]*

Field Mice and Bulbs.—My place is infested with field mice which last year destroyed my bulbs as well as inflicting other damage. What can I do to get rid of them?—*James P. Baxter, Portland, Me.*

Taking the Beginner into Confidence

The Why and Wherefore of Common Things—Getting Brain Power to Work—Making the Start with Sense

GARDEN practice, in every instance, is based soundly on reason, and a common sense answer may be found to every one of the seemingly arbitrary or rule-of-thumb methods of procedure. The best gardener is he who is most inquisitive and looks for the reason behind the action, and decides for himself whether or not it applies to his own conditions. For example, drawing earth up around all and every plant because it is a good practice in some cases is a quite common blunder, and though frequently of no consequence, often does real harm, especially with shrubs.

Why Plants are Hilled

THE terms "hill" and "hilling" as applied in the garden are likely to be misleading to the beginner who naturally assumes that they refer to raised mounds, whereas, in fact, almost without exception the seeds are sown in level drills and the "hilling" is done after the plants have made considerable growth. A few of our crops are liable to stem rot and an excess of moisture around the stem of the plant aggravates this trouble. Therefore, muskmelons, cucumbers, pumpkins, squash, and lima beans may be sown in raised "hills" not more than two inches above the surrounding grade; but all other vegetables that are hilled have the soil drawn up around them after they have attained a fair size. The advantage of "hilling" i. e., drawing up earth around the stem of the plant is to protect weak stemmed plants against blowing over during heavy rain storms (string beans, corn). In some cases plants send out a new rooting system from the newly covered portion of the stem (corn and tomatoes).

Potatoes are hilled when they are in flower as at this time the tubers are forming and this extra earth acts as a mulch conserving the moisture and protecting the young tubers. Asparagus is sometimes hilled when the crown (which gradually raises) gets too near the surface. In large plantings this is accomplished by turning a furrow on the row with a plow; in small gardens a hoe can be used. String beans are hilled to protect them from storms when the plants have started to branch out freely. Cabbage and cauliflower that are spindly from overcrowding in the seedling bed or excess of shade may be hilled slightly after they are thoroughly established, in order to get an approach to normal. Celery is often hilled as it grows to keep the shoots from spreading which would expose the heart and toughen it. But some gardeners keep the plants tied together with raffia and the hilling is done at one time in the fall, which is preferable. Corn is hilled when about 12 in. high to prevent breakage by storm. Leek is hilled as it grows, to lengthen the stem which is the edible portion of the plant. Peas are hilled when about 6 in. high to protect them until brush or other support can be applied.

Why We Thin Plants

THINNING out" of plants is a necessary evil. The ideal condition would be to sow just enough seed so that no thinning out would be necessary; but that is impractical and it is physically impossible. For instance, in order to assure three strong healthy lima bean plants to each hill, we sow six seeds and thin out later to three plants, discarding the weak. This uses double the actual quantity of seed to insure our crop, but is by no means an economic waste. Onions, beets, carrots and other seed of this type sown in an open drill must be sown thickly enough to assure a good stand and to relieve the danger from a poor thin row caused by a low percentage of germination. In some cases ants or other insects destroy the seeds, birds pull out the tiny seedlings when they first appear above ground, or insects may destroy some.

The danger of using too much seed lies in thin spindly plants because of lack of light and air. To prevent this the row should be

thinned out just as soon as the seedlings can be handled. The roots of the seedlings will interlock if they get large causing large clumps of earth to loosen and removing many desirable with the undesirables. While "thinning out" also remove weeds in the row which are out of the reach of the cultivator or hoe.

Corn, watermelon, muskmelons, squash, pumpkins, cucumbers, pole limas and other pole beans when sown in hills are usually planted 6 seeds to a hill and thinned out to 3 plants after the danger period is passed; carrots and onions are thinned to about 2 to 3 in. apart according to variety; chiefoy, kohlrabi, turnip and beets are thinned out to 4 in. apart; about 6 in. apart is the proper distance for celeriac, parsley, parsnip, swiss chard, rutabagas and salsify. Golden Bantam or other dwarf corns will stand a spacing of 8 in. while the larger types such as Stowell's Evergreen should have at least 12 in. which is also the proper distance for endive, lettuce, okra and New Zealand spinach.

Watering in Rows

ON SOME seed packets holding seeds with very hard jackets you may find the instruction "soak seed for 24 hours before sowing." The soaking of course hastens germination, because it assures the supply of moisture to the seed. The beginner working on the theory that "if a little is good a whole lot must be better" proceeds to apply this to all seeds and pays the price of misdirected energy. Seed soaking done without regard to existing weather conditions may start the young roots into a false growth, reaching out for non-existing soil moisture. If warm water is used to soak the seeds and they are then put into a cold uncongenial soil without further ceremony, obviously loss may occur. A much better plan is to thoroughly saturate the drill to supply the needed moisture for those seeds that require it, as the young roots then find the necessary moisture to continue their growth and at an even temperature.

During continued dry weather follow this system when sowing seeds: After making the seed drill, keep it filled with water for several hours. The moisture penetrating into the earth will encourage the roots downward and the dry soil on top will help conserve it, a very desirable combination. Certain objectors condemn all practices of this kind on the ground that growth is only in proportion to the natural condition. No doubt all such would like to go back to our first "natural" apples or other fruit.

Successional Sowings

THE essential of a successful vegetable garden is unfailing vigilance in the new sowings of quick maturing crops, and subsequent care of the growing plants. But, if the sowings are not timely no amount of later care will offset the initial error. A working rule very easy to keep in mind and which is founded on normal growing conditions is to make a practice of making successional sowings *when the preceding sowing is showing above ground*. Quantity may be definitely measured by requirements, but *continuity of crop* must be judged by growth. For example, beans can be had all summer by sowings made at intervals of approximately two weeks. A half row, or even a quarter row, with the other sections sown at proper intervals is preferable to one large sowing where the product necessarily gets tough and stringy before it can be used.

Peas, spinach and radishes are cool crops, and can be sown at frequent intervals until June 1st; then discontinued until fall. In summer the peas mildew, the spinach runs to seed and the radishes get "hot" and useless. Beets and carrots should be sown throughout the entire summer, in small quantities and just as the previous sowings are "showing," the last sowing not later than August 1st and can be of large proportions to assure roots for winter storage. Cucumbers, although continuous bearers, are best if sown at intervals to have young vigorous productive vines in bearing at all times, because

the old vines get seedy and unproductive to a certain extent and when young vigorous vines are available the old ones should be torn out and discarded; make sowings until July 15th. Corn can also be sown at periods until July 15th, regulating the quantities to suit requirements, but never breaking the sequence. Lettuce about every 2 weeks until September 1st using the non-curling or small heading types for summer as the larger heading types then run to seed too quickly. Endive is a fall vegetable certain to be tough and flavorless during summer, so start sowing in July and continue until September 1st.

Setting Out "Warm" Vegetables

NOTHING is gained at any time by setting out plants until the weather conditions are favorable. Lettuce, cabbage, cauliflower, onions, leek and early celery are all quite hardy and can usually be set out in late April or early May; but eggplant, peppers, tomatoes, muskmelons, corn, squash and pumpkins are all tender and when started indoors must not be planted out in the open until the ground is warm and growing conditions are favorable. Nearly all those classed as "tender" are crops of one seeding, and if destroyed by a belated frost or even injured by a spell of cold damp weather the entire garden effort for the season so far as they are concerned is jeopardized. With crops that are sown at intervals (such as corn), this first planting is for early maturity, and if lost no great harm is done since subsequent sowings made out of doors will be safe and form the bulk of the yield. If pot grown plants are used for this work there is little actual danger in transplanting, but when these plants are raised in boxes or beds (and the roots must be disturbed in transplanting) care needs be exercised, the first consideration being that the ground is ready in advance to receive them. Don't have the plants laying around in the sun and wind while you dig a place for them. The importance of proper planting is too often overlooked and lacking the essentials of a proper start, the plants usually limp along for a short time rarely yield satisfactorily, and in fact midsummer usually finds them a victim of "dry weather."

Make a drill for transplanting, just as you would for sowing seed. Set the line and get it straight. Sprinkle a little fertilizer in the drill to give the plants a flying start; this you can work in the soil with a trowel as you plant. Set the plants the required distance apart and start planting from one end. Chop the ground thoroughly with the trowel pressing it down as deeply as possible, and make the hole sufficiently large to accommodate the roots. Then firm the plants in place and soak the ground thoroughly with water, using as sprinkling can for this purpose, which assures the perfect settlement of earth around the roots which it was necessary to disturb in the planting. A little shade should be applied for a few days or until the roots have started activity.

Getting the Peas on the Stakes

ORDINARY birch twigs or branches of other deciduous trees or shrubs are the best means of supporting peas, as they allow the vines to ramble in nature's fashion preventing crowding with its consequent bad effects. When seed is sown in wide rows a double row of pea brush, one on each side of the row, is preferred, even though you are short of brush. The chief fault of a single row is danger from storms. Don't wait until a storm has flattened down the vines before supporting them, the brush should be applied when the vines are about 6 to 8 in. high; there is no need of attempting to tie or train the vines, they will take very good care of themselves if you give them the necessary support, before they feel the lack of it. A poultry wire support is a very good substitute for brush, the mesh being at least 2 inch to facilitate the picking of the pods. A single row of support is customary when wire is used.

The Garden Movies, No. 5

Everything has a move on too; early crops growing, more seed sowing, hilling and hoeing every day! As the month passes tender plants are set out and spraying is frequent

(Photographed by W. C. McCollom)



You hill bush beans to support the stem and so keep the plant erect



Here's a practical way of opening a deep drill, using a plank as a straight edge



Let "succession and thinning" be the watch words of the productive home garden, and remember to thin quickly



Get the children interested in a garden plot of their very own where they can experiment to their hearts' desire



Tender transplanted seedlings will need shelter at first, from both frost and sunshine



Cultivation with hoe and rake keeps down weeds and keeps in moisture, two important things for every gardener



Remember to water all transplants and young seedlings also, to keep them growing steadily



Summer success is built on foundations laid in spring. Dry weather then is discounted now



Start the assault on the insects before they can get ahead of you. Don't spray fruits in full bloom but give the bees a chance

THE MONTH'S REMINDER, MAY, 1918

The purpose of the Reminder is to call to your attention the things which should be thought about or done during the next few weeks. For full details as to how to do the different things suggested, see the current or back issues of THE GARDEN MAGAZINE. (An index of contents is prepared for each completed volume, and is sent gratis on request. The READERS' SERVICE DEPARTMENT will also cite references on any special topic if asked—that's its job.) To get the full benefit of this, check off with a pencil, in the square ☐ provided for that purpose before each paragraph, the items that apply to your own case, and use the page as a reference list.

THIS is the month of all months when the inexperienced gardener is likely to be caught "off guard." There is a tendency to "let up" after the first strenuous weeks of the spring drive. Work in the garden not only accumulates, if put off, but actually grows. A two-hour job of weeding on Monday becomes a four-hour task by Saturday, and so on.

 Keep all crops growing now because the first few weeks of growth determine the kind of crop that you will harvest.

Nursing the Baby Crops

GET after the weeding early, using the wheel hoe or weeding rake not later than three or four days after planting, at the most. ☐ Take out the weeds in the rows as soon as the vegetable seeds sprout enough to mark them, taking care to break every square inch of surface. ☐ Thin plants promptly when the first or second true leaf appears—don't delay.

☐ Cultivate frequently for rapid growth as plants need air as well as moisture. With the wheel hoe or garden rake loosen up the soil between the rows to establish the "dust mulch" and get as near the rows as possible. Use high side guards on the tool to prevent soil from falling on the little seedlings.

☐ Don't rush late plantings! Remember that we cannot afford to waste seeds this year. Make every one count. Do not plant tender crops such as beans, lima beans, sweet corn, tomatoes, etc., until the danger of late frost has passed.

Vegetables to Plant Now

EARLY this month sow succession crops of ☐ beets, ☐ carrots, ☐ cress, ☐ kohlrabi, ☐ lettuce, ☐ peas, ☐ potatoes, ☐ mustard, ☐ radish, ☐ spinach, and ☐ turnips.

After all danger from late frost and not before; ☐ beans, ☐ lima beans, ☐ corn, ☐ cucumbers, ☐ melons, ☐ martinias, ☐ okra, ☐ pumpkin, ☐ squash; also ☐ egg-plant, ☐ melon and ☐ tomato plants from under glass. See the succession planting table "to keep the pot a boiling" on page 192.

☐ Sow lima beans "eye-down" for this reason:—The two halves of the bean are really the first pair of seedling leaves. Because of their size, they often find it difficult to reach the surface, unless planted "eye-down."

Prepare for the Cussed Cut-Worm

THE way to handle the pernicious cut-worm is to ☐ scatter a poisoned bait on the ground a few days before setting out tender plants, or just as sprouting seeds are coming through the soil. Cut-worm "food" can be bought ready prepared, or it can be made according to the following formula: One pound of wheat bran or corn meal, one ounce of white arsenate or paris green, one-half cup of molasses, the juice of half a lemon and two pints of water. Distribute in small particles where wanted.

☐ Brush peas and put in poles for ☐ beans and ☐ tomatoes before the plants get a start. To make pea brush look neat pile with butts all one way and press down with boards or heavy weights two or three weeks before using.

☐ Stimulate strong growth with nitrate of soda at this time or use sheep or chicken manure, placing it along the rows or around the hills.

☐ Time for spraying is here, so get your supplies on hand and put apparatus in good order. (See pages 187 to 191.)

For the Flower Garden

MAKE a seed bed in a sheltered place, and away from the drip of the eaves of buildings, for the early starting of the more tender flowers. This is much more satisfactory than sowing in the open where the plants are to remain.

SOW out of doors, ☐ annuals, and the ☐ tenderer biennials, and ☐ perennials. These include African Daisy, Ageratum, Sweet Alyssum, Snapdragon, Aster, Balsam, Calendula, Candytuft, Celosia, Cosmos, Dianthus, Gypsophila, Morning Glory, Japanese Hop, Larkspur, Lobelia, Marigold, Mignonette, Myosotis, Nasturtium, Pansy, Petunia, Poppy, Salpiglossis, Phlox, Sunflower, Verbena, and Zinnia.

Plant the following bulbs. ☐ Anemone, Tuberous Begonias, Caladium, Calla, Dahlia, Gladiolus, Tuberose, Zephyranthes and Cana-na; also Emerald-vine, Madeira-vine and Cinnamon-vine, fine climbers for quick results. All these things are more or less tender with the exception of the Gladiolus which can be planted at any time now. ☐ To have a continuous supply of those make plantings every two weeks until the middle of June.

Hardy plants to go out the first part of this month are ☐ Ageratum, Sweet Alyssum, Aster, Geranium, Lobelia, Petunia, Phlox Drummondii, Verbena, and Vinca. The tenderer plants which should not be set out until after danger of frost is over include ☐ Alternanthera, Begonia, Coleus, Heliotrope, and Salvia.

Flowers also need cultivation just like the vegetables. The same rules apply in both cases.

Transplant if necessary. ☐ It is not yet too late to take up and re-plant perennials that have been growing in one place for several years and beginning to "run out." Wait until the flowering period is over before shifting early flowering perennials. This is discussed in detail on another page of this issue.

Thinning out the flower stalks and removing some of the buds on those remaining will give bigger and better flowers with almost every plant; also give a top dressing of nitrate of soda just as the buds are beginning to form to push development.

Prepare ground for the planting of summer bulbs, using thoroughly rotted manure, or better still, humus, sand, and a little bone dust. ☐ Do not plant, however, until the end of the month.

Under Glass

EMPTY the greenhouse as soon as possible, putting into the frames ☐ everything that needs to be hardened off before planting outside. ☐ Give abundant ventilation to whatever remains. Utilize the cleared space for growing tender things such as ☐ cucum-

bers and ☐ tomatoes; or for planting ☐ beans or some other crop to be "forced" for extra early results.

☐ Spray or fumigate every week to keep the green aphid and other greenhouse pests in check.

To get extra early tomato plants, ☐ pot up the desired quantity in five-inch pots.

When warm weather arrives leave the sash off the frames more and more, and give an abundance of water. It is hardly possible to over-water from now on.

☐ Harden off the tender things. Don't set pots in the open until they have had a few nights in the coldframes without any covering. When first taken from the greenhouse they should be plunged to prevent wilting.

Around the Lawn, Walks and Drives

THE sooner you re-seed and re-sod spots which will not "come back" the better. ☐ Patch up the centre by a thorough forking and a dressing of bone dust. Sow generously a high quality grass seed; the cheap mixtures contain weed seeds and frequently too much clover. Sods are better for mending edges, slopes or banks.

Top dress the lawn, but be careful. ☐ Fine ground bone is very satisfactory. ☐ A very light application of nitrate of soda, and repeated after two weeks, stimulates growth and gives a dark color. Humus is beneficial.

Provide for summer drought. Modern underground or out-of-sight systems of irrigation placed along the edges of the lawn will assure its fresh and green appearance throughout the year. Portable systems, useful for both lawn and garden, can be purchased at very reasonable prices. ☐ Why not investigate?

Put earth roads and paths into shape before they become thoroughly dried out and hard. ☐ "Make good" all walks and drives, beginning systematically to build up a little at a time. ☐ Cinders make paths and drives both permanent and satisfactory. ☐ Drain where necessary.

Personal Flowers and House Plants

PLANT potted Roses now for bloom next month. ☐ Spray now for perfect flowers in June. ☐ Watch out for green aphids and other Rose bush troubles. ☐ Any neglected pruning must of necessity be done now, removing from a half to two-thirds of last year's growth. Bear in mind that the blooms of the Roses are borne on the new wood of this year, and prune accordingly as was illustrated in the March issue.

Move from the house to the veranda any ☐ decorative or ☐ house plants that are well through blooming, or to some other sheltered place where they can be looked after and not be in danger of getting caught by late frosts.

☐ Cuttings of any of your favorite plants started now will give good, strong pot plants for bloom next fall and winter.

Insuring the Orchard

THIS is the month for orchard spraying. Spray just before the buds open and again after the blossoms fall. There is more to it than can be given here; but read the articles on pages inclusive 187 to 191, and get aroused for the campaign.

THE PATRIOTIC GARDEN

FOOD F-O-B THE

He also Fights who

EAT FRUIT AND SAVE SUGAR

KITCHEN DOOR

helps a Fighter Fight

H-HOOVER

EAT NUTS AND SAVE FAT

Making a Nation of Garden Cities

Charles Lathrop Pack, President, National War Garden Commission, Washington, D. C.

HOME gardening has become a business. It is just as much of a business this year as manufacturing, mining, building, agriculture, or any other occupation. It has taken its place alongside the big industries of the country which employ hundreds of thousands of people and produce millions of dollars' worth of goods.

In fact, home gardening has stepped almost into the lead of all businesses. Both in the number of persons occupied in the work and in the value of the product it takes a front place.

With the exception of agriculture there is no other occupation to which so many individuals are devoting themselves. More than 5,000,000 people in the United States are this year cultivating back yards, vacant lots and other city and town tracts which hitherto have been "slacker" land. From a few thousand the number of home food producers has grown to unprecedented numbers. Many other businesses have received wonderful impetus from the activities and the necessities of the war, but few of them can parallel that of war gardening.

The Home Munition Plant

BEFORE the entrance of the United States into the war only a few scattered homes in each city and town raised some of their own vegetables. The war revealed the value to the individual and the vital importance to the nation of producing all the food that was possible. It showed the need of utilizing every resource which would help to win.

The movement for home gardens everywhere, with every back yard and vacant lot a "munition plant" growing ammunition, which was organized and nationalized last season by the National War Garden Commission resulted in the planting of more than 3,000,000 such plots. The number has been more than doubled this year, and will produce a wealth of food which will count heavily in the war chest of the nation.

PROBABLY no other appeal to the patriotism of the American people ever met with a more widespread and generous response than "war gardening." It set the great heart of America beating from coast to coast. Inspired by the excellent showing made last year and spurred on by the knowledge that "food will win the war" men, women, and children all over the United States took up war gardening this year. Both as individuals and as members of various organizations they have gone about this as true soldiers of the soil, in the same spirit with which their

husbands, fathers, brothers and friends went into the army and the navy. Many responses came as a result of the appeal printed in the January number of *THE GARDEN MAGAZINE*.

The World's Eyes On Us

OTH^{ER} countries are writing for information about the Commission's work in arousing the nation to war gardening. The British Food Administration, Lord Rhondda, director, has appointed a committee to keep in touch with the work of the National War Garden Commission with a view to adopting and using such parts of the Commission's plans and methods as may be applicable to the British situation. The work of the National War Garden Commission came to the attention of the British body, and in the belief that England might still further increase her food production along somewhat similar lines, it was decided to incorporate some of our American methods to secure the use of every available foot of home gardens and community



An army of school children was enlisted to help work at local food production. Columbus, Ohio, is but typical of many other cities

land. In spite of the fact that there was an increase of more than 1,000,000 acres in the land cultivated in England last year, there is still the opportunity of getting much city land to work.

Many of the people of England have small home gardens and the British Food Administration determined to make war gardening a national work.

Women's and Other Club Work

IN THE United States women's clubs all over the country have been particularly active in spreading the message of home food production. They have organized patriotic garden clubs in hundreds of places. They have established model gardens. They have encouraged school children, under proper supervision, to plant gardens of their own. Demonstrations on canning have been conducted by the Department of Agriculture and other agencies and regular canning kitchens opened where the home gardeners can bring their extra product and conserve it either for their own use, for sale or for distribution among charitable or war relief institutions.

Chambers of Commerce appointed garden committees and distributed literature to help the home gardeners. Civic associations of all sorts have been active in encouraging the campaign. Industrial concerns have helped their employees to plant gardens, furnishing them with the land, plowing it, providing the fertilizer and the seeds, and allowing the men to pay for these in easy installments. Banks and other business concerns have distributed hundreds of thousands of the Commission's War Vegetable Gardening books and its other literature.

The General Federation of Women's Clubs through its national organization and its state and local bodies has called on the women of the nation to ply the hoe as well as the needle. Mrs. John Dickinson Sherman, chairman of the Conservation Department of the Federation, is a member of the National War Garden Commission, and as such sent out a strong statement in which she said in part:

American women are confronted by a condition and a responsibility and opportunity without parallel in the history of the world. There never was before a war in which women had a recognized place outside of hospitals, but they now have a place so important and responsible that this war cannot be won without their help. To produce more food and to put increased production to its best and fullest use is the immediate and urgent work of the American people.

The women have been active in the war garden movement also through their state councils of defense. The food production committees of these bodies saw to the planting of as many community plots as was possible. As an illustration of what was done in this direction, here is an extract from a bulletin sent out to the county chairmen on food production among women by Hortense Tapp Moore, Indiana Chairman of Food Production, Council of Defense:

Our tables must be supplied with food raised on our own premises. Women must get close to MOTHER EARTH and make her yield as she has not for many years. The woman who sits on her porch this year and crochets and embroiders is a slacker. She is no better than the woman who sits at the bridge table, who slaves over dress or who seeks diversion at the summer resorts while our sons and brothers are giving up their lives that she may be safe. The

woman who can but does not work with her hands this year is not a woman. She is just a thing—an irresponsible, pitiful thing.

Miss Florence King, prominent woman attorney of Chicago and president of the Women's Chamber of Commerce of the United States, is one of the leaders among women in this work. She organized classes for the instruction of women in driving farm tractors and a large number of women, many of them already experts at handling automobiles, responded to her call.

In Boston the Women's Municipal League conducted an intensive campaign to arouse the interest of the people in war gardening. The National War Garden Commission sent thousands of its books of instruction on gardening, canning, and drying, and storage of vegetables and fruits to clubs and organizations all over the country for dis-



Hundreds of employees in industrial plants all over the country turned in with a will the armies of the Allies. Employees of the Oliver Chilled Plow



Not only were supplies raised for immediate use but the surplus crop handled in the cooperative canning works was saved in many a community. The canning kitchen at Hamilton and Wenham, Mass.



Power tractors and gang plows at work on land never before cultivated. More than 60 acres of land plowed and set aside for employees by the General Electric Company, Schenectady, New York. Individual allotments were 50 x 75 ft.

tribution to the city farmers and to help in conserving the products of the garden.

Cities and Towns Line Up

TO NAME the cities and towns where war gardening has taken a strong hold would be to give a roster of nearly every place in the United States. In Cincinnati the work has been carried on under the competent supervision of Mrs. L. D. Drewry, with Mrs. Samuel Taft and Miss Mildred Shillito as two of her active assistants. In Indianapolis the big drive into the garden trenches was made under the direction of Harry Miesse, secretary of the Patriotic Gardeners' Association; in Newark, N. J., through the Vacant Lot and Yard Improvement Association, Carl Bannwart, president; in Atlanta with Mrs. Spencer R. Atkinson, president of the City Federation of Women's Clubs, handling the details and with the Chamber of Commerce and numerous other bodies and individuals backing the movement; in Kansas City, with E. R. de Vigne, Commissioner of Agriculture for that District, in charge; in Denver, under the supervision of P. L. Clarke.

States where the population is dense and where cities and towns are near each other have been turned into practically one big war garden. In Connecticut the Fairfield County Association for the Mobilization of Resources distributed more than a hundred thousand copies of the Commission's garden book among the employees of the factories which abound

in that busy territory. In this way many of the workers in munition factories have been doing double service for their country. They have been helping in the manufacture of guns and of implements of war and at the same time during their spare hours they have been raising food—that other ammunition which is just as important and as vital to success in the war as guns and bullets.

Home Gardeners to Feed the Army

ONE OF the big helps to this class of workers this year, and in fact to all war gardeners, has been the adoption of Daylight Saving, which had the hearty backing of the Commission. This extra hour of daylight in the afternoon means to the home food producers a tremendous increase in the output from the back yard munition plants. It means an increase of from 25 to 50 per cent. in the amount of food grown. More intensive cultivation of the home plot can be carried on than would have been possible under the old time system. Daylight Saving adds more than 300,000 years of actual working time to the war gardeners' work. In seven months of 26 working days each it gives to each 1,000,000 war gardeners a total of 182,000,000 hours, or 22,750,000 days of 8 hours each.

Conservative estimates show that 5,000,000 gardeners can produce the equivalent of enough food to sustain 1,000,000 soldiers for 238 days, or almost eight months. *The additional power which daylight saving gives them means that they can increase this to ten*

months; and perhaps supply to the nation's larder the equivalent of all the food needed by the American Army, which will be in France before the end of this year, for a full twelve months.

Daylight Saving had proved a valuable adjunct to the war preparations of other countries before the United States began to consider its adoption. Fourteen countries already had adopted it. Germany was the first. It was put into operation there shortly after the outbreak of the war. The other belligerents and a number of the neutrals followed. It was successful and satisfactory wherever tried. Workers and other classes of the populations were pleased with the summer innovation which not only effected important savings but gave them more time in the open.

On this account and because of the realization that it would be of great assistance to the war gardeners of the United States, the movement here received the strong endorsement and the complete support of the National War Garden Commission. That results will justify this stand there is no doubt.

No single measure that could be adopted, in the opinion of the Commission, would do more to increase food production *via* the back yard and vacant lot. Firm in this belief, the Commission did all it could to further the passage of the daylight-saving bill. Both the Senate and the House committees which had charge of the bill also emphasized the important part that this pushing of the clock an hour ahead during the summer months would



and did their share of feeding themselves and help feed the nation, and incidentally Company at South Bend, Indiana, on land provided by the Company



3,000 ft. above sea level in the mountains of Arizona employees of the Consolidated Inspiration Copper Company, cultivated 217 acres of war gardens. Artesian wells were dug for water, guards and instructors provided, and surplus product handled in an exchange depot



The Country Life Press grounds at Garden City, N. Y., were turned into potato fields and worked in their own interests by individual employees, some of whom thus raised sufficient to meet all their winter needs

have in helping the city farmer. In reporting out the measure both committees used this language:

"In view of the increased food production which will be brought about under the bill, the comfort and convenience which it will bring to laborers and the public generally, and the saving of expenses, especially relating to light and fuel, it is believed by our committee that the measure should be enacted."

Through the press of the country, by calling upon those interested to urge upon their congressmen the importance of the measure, and in other ways the National War Garden Commission pressed for the passage of the daylight saving bill. "Improve each shining hour" and make your war garden yield to the maximum, was the message which the Commission carried to the "fighters of the hoe."

Forceful Phrases Invented

ONE of the big factors in arousing the people of the United States to the great patriotic service they could perform through war gardening, was through the slogans which the Commission sounded from time to time. They went home to the hearts and minds of the readers and set them to thinking, with the result that the army of soldiers of the soil was recruited daily by thousands of new members.

"Every Garden a Munition Plant" is the slogan on the design drawn by the well-known artist, James Montgomery Flagg, and used on the cover of the issue of the GARDEN MAGA-

ZINE. This is also being distributed as a poster by the Commission. The home tillers set out to "sow the seed of victory" and to "grow the ammunition" which is as essential as shells and bullets.

"Can Vegetables and Fruit and Can the Kaiser, too" is the slogan on another striking poster issued by the Commission. This is the work of J. Paul Verrees, a Belgian artist, who came to this country and who has contributed his bit in this way to the drive for increased food supplies.

"Grow Food F.O.B. the Kitchen Door" is one of the most forceful slogans which has been coined and used by the Commission. Attention was called to the help this method of raising food would be both to the individual and to the nation; to the former by furnishing him with plenty of good fresh vegetables at a great saving to himself; and to the nation by the relief which would result to the transportation situation.

"Hohenrakes versus Hohenzollerns" is another of the phrases which has hit the reader between the eyes. Variations of this idea that the "city farmer" could "fight the Kaiser with the hoe" were contained in the following: "Get Into the Garden Trenches"; "The Hoe Is the Machine Gun of the Garden"; "Food Must Follow the Flag."

"Speed Up and Spade Up" told the reader that it was time to get ready for "the spring drive into the garden trenches."

"Plan to Plant and Win the War" was the patriotic slogan which the Commission sound-

ed throughout the country to direct attention to the vital need as a war measure of speeding up in the production of food. "Plant War Gardens for Your Life and Liberty" tells the same story in a slightly different form.

"Let There Be No 'Slacker' Land" was the message which made it plain that any uncultivated back yard or vacant lot anywhere in the United States this year would be considered in the same class with those unpatriotic citizens who tried to evade military service when called to the defence of their country.

"Keep the Home Soil Turning"—a paraphrase on the title of the famous song, "Keep the Home Fires Burning"—called to the war gardener to make every foot of his vegetable plot productive, working all the time for Uncle Sam and growing food, one crop after

another, all spring and summer long and late into the fall.

"Tune Up the Spading Fork" and "Trim the Kaiser" are other slogans which were effectively used. "Kaiser Killiam" was the manner in which the name was spelled in one bulletin which was sent out.

"Help Uncle Sam Fill the Ships With Food By Feeding Yourself. If We Do Not Feed Ourselves We Will Have Food Cards Decorated With a German Eagle at the Top That Will Tell Us What We Can Eat," was another message which the Commission gave to the American people. Everyone was urged to plan a garden, send for a free war garden primer and then "Spade for Your Life and Liberty."

The result was that requests came from all over the United States, and even from people in foreign lands, including China and Australia, who had heard of the work of the Commission, for copies of the garden primers which were sent out by the hundreds of thousands.

Big Business Helps Too

BUSINESS men in all lines of industry, men controlling the output of millions of workers, early saw the worth of war gardening as a factor in increasing the nation's food supply and in winning the war. The New York State Bankers' Association sent a large consignment of the Commission's garden books to all its members throughout the State and urged them to aid in the distribution of this valuable aid to city farmers. Thousands

of banks all over the country gave these instructions out over their counters with their compliments and urged their patrons to grow food.

The daily garden and canning lessons prepared by the Commission and sent to newspapers all over the United States were printed not only in this country but in Canada and used as models in other countries, while hundreds of thousands of people have written for instruction in gardening to the National War Garden Commission or to the U. S. Department of Agriculture.

IN MANY places historic ground is being tilled by the war gardeners. At Caldwell, N. J., for instance, the ground on the estate surrounding the Old Presbyterian Manse, the birthplace of Grover Cleveland, was plowed for the Boy Scouts who are busy fighting the Kaiser with the hoe. *The Hoe and rakes will help defeat the Hohenzollerns.*

In many cities large sections of the public parks and of city lands are being utilized for war gardens, while in Norfolk, Va., the Commission on City Beautification promoted the war garden movement because it meant

the cleaning up of many unsightly vacant lots. Similarly in other cities the improvement of conditions was an added reason for encouraging home food production. The value of property was increased at the same time that the nation was being benefited.

Many cities are delighting in the new name which can now literally be applied to them of "Garden City." It is a name which has taken on a new meaning and which gives a new pride. It gains in glory with its increase in numbers. Membership in the Society of Garden Cities is a token of American honor.

The War Garden in Action A. KRUEH

Insistent Details of this Month of May—Thinning the Lines to Get Space

THE most important work this month is the "thinning out" of seedlings! Now, in spite of all preachments to sow seeds sparingly, it is but human to count on the infinitesimal cost of the individual seed and to say "Better to put in a few extra seeds now than later to wish I had,"—etc., etc.

"SPARE the plants and spoil the crops" applies to all vegetable rows alike. What you gain in number of plants per row, you lose in size or productiveness of plant. Root crops such as beets, carrots, radishes, turnips, etc., should be thinned out to stand from one to four inches apart in the row, depending on class and variety.

CONSIDER radishes, for instance. The space needed for each root is governed by the size of the top the plant has to develop to form a good root. With the small, cherry-stone varieties, the distance of 1 in. is sufficient for each root, because the tops seldom have more than six small leaves. For the longer, later sorts, such as Scarlet Short Top, Icicle, Cincinnati Market, etc., allow 3 to 4 ins. apart in the row.

GENERALLY speaking, beets, carrots, and turnips require 3 to 4 in. of space in the row. Yet, it is hardly safe to sow one seed every three or four inches, because of possible lack of germination of seeds, insects, contrary weather and many other factors beyond the

planter's control. Unfortunately, of these four root crops only one lends itself to transplanting. Beets do very well when transplanted quite young. Don't bother trying to transplant carrots, radish, or turnips. Except in very few instances (governed by unusual soil and ideal weather conditions), even carrots will disappoint. Radishes and turnips are entirely out of the transplanting question.

"PLANT in haste and re-plant at leisure" is a good adage to keep in mind throughout the month. Don't risk your tomato, pepper, and eggplants, nor the beans, cucumbers, and corn, simply because, for a few days, the sun will register good intentions. Remember that May nights offer a chilly reception to summer's wooing.

It's a fact that a "chilled" planting of all the soft or tender vegetables will require a longer time to recuperate than a new planting will require to catch up to the first planting. Time and again I have found it profitable to hoe out a frosted (but not "killed") row of bush beans rather than to wait for it to get over the setback.

STUDY local weather conditions. If the average last frost for the last twenty years has been around May 25th, figure on that date. It is safe to figure that the majority of seedlings require a week or ten days before they peep through the soil. *Don't sow seed of tender crops until you KNOW that the seedlings*

will show after the last cool night has made its "adieu."

THE SEASON has brought many seed shortages, but none can compare with those recorded in beans and corn. Among beans, the bush varieties especially are so scarce that an advance of 100 per cent. in retail prices is the rule. It simply means that you are paying twice as much to make a start as you ever paid before. To make the best of the situation, put seeds six inches apart in the row and give every plant a better chance to develop. Bigger individual plants will bear better crops of larger individual pods.

YOU USED to be willing to "take a chance" with an early sowing of Golden Bantam sweet corn outdoors, because seedsmen say that Golden Bantam kernels don't rot as easily as those of other sorts. *Don't take that chance this year!* Golden Bantam is worth fifteen cents a pound in carload lots! Every seed of it, this year, is like a little gold nugget. You may still gather extra early ears by starting some plants in paper pots indoors or in a coldframe. Four kernels per pot will insure three sturdy plants per hill.

THIS is the month to prepare for the gathering next fall of such root crops as require a long season to develop. Parsnip and salsify as well as witloof chicory should be sown this month or the roots will not reach full size before frost. Why pay ten to fifteen cents for a bunch of four to six roots for these crops next winter when a timely sowing in May will insure the supply?

ANYTHING you may sow this month must be prepared to "run into a spell" of hot or dry weather during June or July. Govern your planting plans accordingly, and select best succeeding strains. For example: Don't sow Big Boston or Boston Market or Simpson Lettuce. They'll just yield a crop of seed stalks or "flabby" plants. Sow All Seasons, New York Crisphead, or Cos varieties for cutting during June, July, and August.

FOR THE SAME reason it does not pay (except in Northern localities) to plant such cool season crops as cress, spinach, turnips, onions from sets, etc., during May. The time to enjoy them again is during September and October, from sowings made during late August. Study the planting chart and zone map in last month's GARDEN MAGAZINE.



Remember "spare the plant and ruin the crop." Each plant will give best returns only when it has room to grow

BE NEIGHBORLY! If, heretofore, you've thought that you had a perfect right to mind your own business, come out of your shell now and cooperate. There will be hundreds of seedling beets, onions, lettuce, etc., that you can't use for lack of space. *Pass them on to your neighbor!* You'll be doing everybody a good turn by doing so. You'll be patriotic by saving the world some seeds, your neighbor some time, and yourself some pangs of conscience for throwing away potential food possibilities.

EACH individual home gardener this year should make it a point to study the comparative food value of the different vegetables. Some, like cabbage, are 98 per cent. water. Cabbage requires at least 100 days to become fit for food, and is a problem in

storage. On the other hand, beans represent food in highly concentrated form, mature readily, and the dry product is easy to keep. Learn to analyze vegetables from the standpoint of food value as well as regarding them as gustatory delicacies.

If some one asks you to which class of plants May offers absolutely *ideal* conditions for development, you may, without hesitation, answer "weeds!" The soil is right, the weather is right, conditions are right, everything is *just right* for weeds, regardless of variety. But the one thing for which the well managed garden should have no room, is weeds. Better to cultivate 20 x 20 ft. and to keep that spot weedless than to have a garden twice that size as a weed nursery.

WEEDS ARE A WASTE!—wasted fertility,

waste of labor, and reduction of normal crops. Kill the robbers while they are young. You can kill more weeds in one hour with a wheel hoe during May than you can pull by hand in one day during July. Of course, it all depends on "the nature of the beast." Some weeds have to be up-rooted and cutting off the tops simply aggravates the roots to stronger activity.

DON'T FORGET the food requirements of the growing crops. Some, like the lettuce, spinach, and other crops grown for the green foliage, will appreciate some nitrate of soda to push them along; onions like wood ashes; potatoes like plenty of hoeing and a long lasting complete fertilizer. All crops like an abundance of moisture, but thorough cultivation often does more good.

Getting the Jump On the Garden Huns F. F. ROCKWELL

What to Do Now to Protect Your Crops This Summer From Bugs, Worms, and Blight—See to it That Your Neighbor Protects His Too

THE man who permits insect pests and destructive diseases to become established in his garden may be looked upon by his neighbors as a garden pest himself. Any one who uses valuable seed and fertilizer and garden space, only to feed the Kaiser's allies in the garden, is not only a traitor to the Free For All Fraternity of Gardeners, but also an undesirable citizen giving aid, comfort and good grub to the enemy! Ignorance and inexperience are no excuses for negligence. The garden "rookie" must assume his share of responsibility in the food trenches along with the veteran.

Down With the Garden Hun!

BUT, good resolutions and forceful phrases don't get anywhere unless they are backed up by efficient action.

It will take more than a flag over your garden gate and a membership card in the Volunteer Home Garden Reserves to keep the Huns without the fold. To that end, every garden beginner should take the following steps in garden preparedness for enemy control:

1. Realize, first of all, that there is no "mystery" about this important business of getting the best of the garden enemies. Secret formulas and patent prescriptions are *not* essential, but manufactured articles from firms of repute are *great conveniences* to the busy worker, and especially on a small scale.

2. Remember that 90 per cent. of the things that trouble your garden may be put in one of the three following classes: a. Eating Insects. b. Chewing Insects. c. Fungous Diseases. (Blights and mildew.)

3. Get firmly in mind the fact that for each of these three classes, there is one standard remedy that in one form or another is the primary ingredient of the appropriate remedy, home-made or manufactured brand. These essential remedies are:

Arsenic	for	Eating Insects
Nicotine (Tobacco) or Oils	for	Sucking Insects
Copper (bordeaux mixture)	for	Blight and Mildew



Easily portable, handy type of sprayer to have ready for instant use on individual plants

Repeat these three lines, sing them, whistle them, dance them until you know them by heart, backward and forward, sideways and endways. *They form the basis of your whole garden campaign.*

Getting Into Action

AS EACH one of these things acts in an individual way, their action must be understood before they can be used intelligently.

ARSENATE OF LEAD is a stomach poison which must be *actually swallowed* by the insect to be effective; it must therefore be applied to the portion of the plant which is

being eaten. It should not be put on until just as the particular pest against which it is to be used is putting in an appearance or may be expected. It must be applied to *all* parts of the plant likely to be attacked. It must be applied often enough to keep the new growth covered. If properly put on, it will "set" after a few hours of sunshine, and will not be easily washed off; but after long continued rains it may be necessary to spray again. (In this respect, it is very different from paris green which washes off easily.)

NICOTINE EXTRACT is a "contact" poison. It must be applied, primarily, to the insect itself—of course, incidentally, the plant is covered too; but the material must be brought *directly in contact* with the insect, in order to be effective. It is not a "poison" in the same sense as arsenate of lead; but acts rather as a drug—the amount applied being a fatal overdose for soft skinned insects such as aphids, mealy bugs and so forth. It must be used only when the insects are actually present; but just as soon as they are present. Many of the pests subject to this treatment cause the leaves to curl up, so that it is next to impossible to get the spray to them, therefore prompt action is imperative. These pests also frequently

work or live on the *under sides* of the leaves or at the growing crowns or flower buds of the plant. They seem instinctively to seek protection, and for all these reasons, the gardener must realize that if he does not achieve complete success, it *may* not be the fault of the spray.

OILS or emulsions of kerosene and soap, etc., act against the same class of enemy as the tobacco extracts by penetrating the breathing organs and so suffocating.

BORDEAUX MIXTURE.—The diseases for which this is used are the result of infection by certain bacteria or spores of fungi. The

mixture is not a "cure" for any of these things, because once the plant is attacked, the bacteria are *in the tissues* of the leaf, stem, or fruit, and cannot be reached by any spray applied to the surface. The spray is applied to healthy plants as a prophylactic, forming a thin coating over the surface which makes conditions in which the spores or bacteria are not able to live. Therefore, bordeaux mixture and all other "preventive" sprays must be applied in advance; and they must be applied frequently enough to keep all new growth covered, for otherwise a vulnerable point may be left that makes all the other protection vain. During rapid growth, and at times when conditions are especially favorable to the development of the trouble expected (close, muggy weather), or the

cover *all parts* of the plants to be effective. Dusting is likely to be more successful against chewing insects than against sucking insects or fungous diseases. But as it is very important to apply the poison for chewing insects immediately they are discovered, many gardeners have found it advisable to have a "powder gun" for applying insecticides for eating insects in addition to their liquid spraying equipment.

In trying to decide on the particular style of machine to buy there is one general rule that always applies; *get the best equipment you can find* of whatever type you may select, even though it may cost several times the price of the cheaper makes of the same type. This it may be noted is true of tools, in general. Don't leave spraying solutions in the tank after you get through spraying. If the powder is to be left in the duster it must be kept in a thoroughly dry place—and, incidentally, in a safe one where children cannot find it.

The type of duster or sprayer to be selected will depend primarily upon the size of your garden. For the very small garden, the little hand sprayers or dusters costing up to a dollar and a half to two dollars apiece are satisfactory. Don't waste your money on twenty-five cent "contraptions" that you may be told will "answer the purpose."

For the small garden there are also the efficient shoulder strap compressed air sprayers, costing from six to ten dollars, which hold several gallons of spray mixture and with the automatic nozzle control are very convenient to use. Get a machine that is capable of applying the liquid at considerable pressure. This is important in order to get a fine mist that will reach all parts of the plant. Corresponding with this type of sprayer for liquid materials are the several medium sized "dust guns" which are capable of taking care of a considerable area in a very short time.

For the medium sized garden and the somewhat extensive grounds, it will pay to get one of the portable pump sprayers mounted on one or two wheels. These can be used with either a one or a two man outfit and are capable, of course, of getting over a much larger area with one charge of material and of applying at a considerably higher pressure than the compressed air sprayers, and are economical and satisfactory where the size of the garden is sufficiently large to justify the expense. The wheelbarrow type of dusting machine is excellent for potatoes and some other crops, but is not capable of nearly so many uses as the liquid sprayer.

For the really large place, the barrel pump may be employed. This is usually used as a two man outfit, one pumping and one or two men handling the nozzles or nozzle. While of greater capacity than the sprayer described above, it is not as convenient for getting around in the garden and around small shrubs. There is an advantage, as far as price is concerned, as one need buy merely the pump

alone which can be fitted to any substantial barrel of convenient size.

Pests That Are Exceptions

WHILE the above classification includes by far the greater part of the garden insects and diseases, yet there are others which cannot be fitted with any of those tags. First among these are the several maggots or grubs which attack the roots of growing plants, and which, working below the ground, cannot be reached by any of the ordinary remedies. And, secondly, there are the ordinary borers, which work *inside the stems*, or fruits or roots, as the case may be and are even more difficult to get at. There are no general remedies for either of these classes; each offender has to be handled by a method that is adapted to his particular requirements. What there are, in each case, is described in the "Congress of Criminals," and what to do with them, is told toward the end of this article.

Buy Your Spray Materials Early

THE materials—arsenate of lead, nicotine extract preparations, and bordeaux mixture—may be bought in ready prepared forms, to be used according to directions. They will keep indefinitely and there is no advantage in waiting until later on to buy. In fact, with the present conditions of transportation, there is every reason for ordering at once, so as to be sure of having them on hand when needed. In addition to these three it will be well to secure the following, which, for some purposes, are better than the three standard materials mentioned above:—paris green, hellebore, copper carbonate solution, tobacco dust and flowers of sulphur.

Convict Congress of Garden Huns

IN THE following list there are described briefly the common garden insects and plant diseases and the treatments for the same which have been found most successful. Remember that in all cases, however, success depends first upon immediate action, and second, upon thoroughness. Spraying that is delayed or that is done in a careless, haphazard way will not give the desired results. General garden sanitation, also, should always be practised. Diseased or badly infested plants should be taken up, carefully removed from the garden, saturated with kerosene and burned. Avoid overcrowding and give thorough cultivation, and do everything else



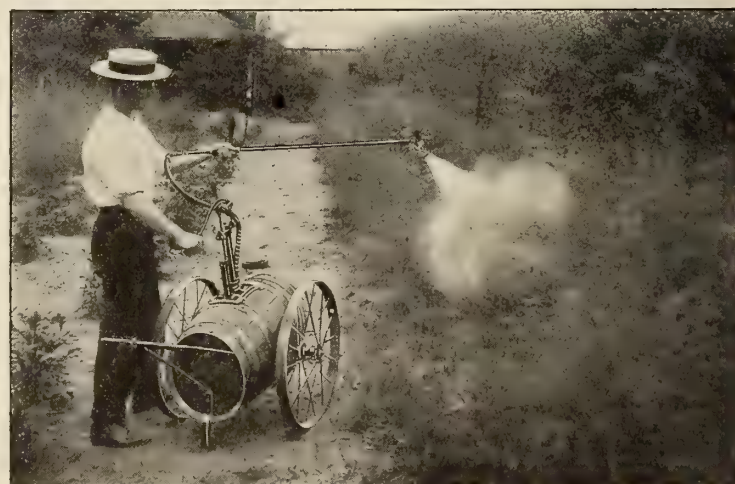
Some sort of a compressed air tank with extension rod is handy for reaching high places

blight or rot in question has been reported in the vicinity—repeat the spraying every week or ten days; under normal conditions, every two weeks or so.

Methods of Applying

THE materials mentioned above may be obtained in either the liquid or the dry or powder form. There are good preparations in each form.

Up to the present time, spraying of liquids has given more general satisfaction, and has been found cheaper than dusting. The argument is often given that dusting is more *convenient* than spraying. It is true that the material in dust or powder form is ready to use without any fuss and loss of time in getting it ready. You merely take the dust gun off the shelf. But the work of actually applying the spray is another matter. It is impossible, especially by hand, to distribute the dust as evenly as a wet spray. This is especially true in applying either contact poisons, for sucking insects that usually congregate on the under sides of leaves, or preventives, for blights or rots, which must



For a vegetable or fruit garden of any pretension, some sort of mounted barrel sprayer is most useful and economical of labor

possible to keep the plants in a healthy, thrifty condition, as they are then in better shape to withstand the attacks of insects or diseases.

Anthracnose, "leaf spot" or "rust," attacking beans, tomatoes, celery and some flowers. Use bordeaux mixture or summer strength lime-sulphur; or ammoniacal copper carbonate solution to avoid stains on foliage and flowers.

Aphis. Attacks peas, melons, Roses and so on. Use nicotine preparations, or kerosene emulsion, two or three applications at intervals of three or four days, reaching under sides of leaves.

Asparagus beetle. Use arsenate of lead on summer foliage; cut and burn all growths in late summer.

Aster beetle. Use arsenate of lead, strong; or pick by hand in early morning while bugs are still drowsy.

Blight, affecting cucumbers, potatoes and other things, in various forms. Spray with bordeaux frequently enough to keep all new growth covered. Dust with sulphur-lead preparations.

Caterpillars. Various kinds attack cabbage, tomatoes, corn, etc. Use arsenate of lead, paris green or hellebore; or pick by hand.

Cucumber beetle. Yellow and black striped. Use tobacco dust as preventive; beetles carry the germs of wilt. Pick by hand the first bugs in early morning.

Cutworms. Fat, sluggish, ground worms, brown with dark stripes, cutting through stems of many plants, especially when just up or newly set out. Trap under pieces of shingle or flat stones; or scatter about, toward nightfall a mash made of one quart of wheat bran, one teaspoonful of white arsenate, one teaspoonful of a cheap molasses, mixed with enough water to make a mash. Careful search around a newly cut plant, early in the morning, will usually uncover the marauder near the surface.

Flea beetle. A small, hard shelled jumping beetle, which punctures leaves of tomatoes, potatoes and seedling plants. Use tobacco dust or kerosene emulsion on seedling plants. Bordeaux or lead on tomatoes or potatoes.

Mealy bug. A scale-like insect with cottony covering, attacking some flowers. It seldom appears in the vegetable garden. Use kerosene emulsion; or brushing with alcohol, or special oil preparations.

Mildew. Attacks cucumbers, melons, lima beans, Roses and other flowers. Dust with flowers of sulphur to prevent spread. Use regular bordeaux-lead spray as an effective preventive during the season.

Potato beetle. Use arsenate of lead or paris green. On egg-plants use arsenate of lead only and pick by hand.

Root maggot. Attacking cabbage, onion, radish, etc. Plant on new, clean ground where possible. Remove and carefully destroy infested plants at once. On cabbage, use tar paper discs about stem when setting out. Sow radishes as a trap, with onion seed removing and destroying the plants when infested.

Rose beetle. Pick by hand and use strong arsenate of lead.

Squash bug. A lively, flat black fellow. Use tobacco dust or pick by hand to get rid of old bugs and eggs; use kerosene emulsion for the young ones.

Squash borer. Slit stem near base of plant, and destroy the borer. Cover wound with fresh soil.

White fly. Attacks tomatoes, vine crops and some flowers. Not conspicuous until large numbers have propagated. Use tobacco dust as repellent; spray with nicotine preparations and kerosene emulsion.

The Coming Fruit Drive M. G. KAINS

Offensive-Defensive Tactics to Conserve Food Supplies

HUNGRY hordes of bugs and blights are sure to *strafe* us in May and make big drives on defenceless fruit and foliage, to take the offensive and make formidable onslaughts. For us to carry on a successful campaign against them and keep them out of our trenches we must be equipped to repulse their massed attacks and to counter-attack with suitable ammunition and adequate artillery. *Now is the time to establish ammunition dumps and limber up machine guns.* Vigilant patrols will discover the foe and when and where debouch is to be made. Our sole salvation is to assault wherever the enemy is mustered.

Keep trees "fit" so they may stand-by to repel all attacks. The "set" of fruit is made in May and June, so the work must be done now!

Arms and Munitions

UNHANDINESS is the bane of spraying. There's a great array of artillery and small arms for fighting bugs and plant diseases. They grade in power and capacity from the "orchard gun" which has the longest range down to the atomizer which works with finger and thumb in a very small area. Each has its utility and its value based thereon.

The essential points of a good pump are brass easily accessible working parts, and ball valves. These cost more to buy than do

iron ones but they last much longer because the corrosive spray mixtures do not affect them. The cheaper pumps may be made to last longer than usual if they are thoroughly cleaned with abundant water after each time they are used. If not so cleaned and if the spray mixtures are allowed to stand in them from day to day they may not last through one single season.

The most perfect nozzles are those which give the liquid a rotary motion in an "eddy chamber" just as it is thrown out. Vermorel, Friend, and Mistry are the three principal forms of this type.

Have plenty of hose especially for tree spraying. For hand use on bushes a few feet only are needed but for trees when power rigs are used 25 feet is none too much.

Among the spraying apparatus adapted to the home fruit garden the following are typical:

Compressed air tanks which usually hold from three to five gallons and furnished with an adjustable strap and handles are excellent for carrying when spraying bushes, grape vines, strawberries and other rows; also for trees when placed on the ground and supplied with extension rods and longer lengths of hose. For such purposes they are lighter and more easily managed than the old style.

Knapsack sprayers. These are tanks strapped knapsack fashion to one's back. They are provided with pumps, the handles of which extend over the shoulder where they are pulled down by rods. The main objections to them are their weight, their proneness to leak at the top and the attraction the leaked solution seems to have for the small of the operator's back!

Bucket pumps there are in considerable variety. Their strongest point is their ability to maintain high pressure. Their weakness consists in being less handy to move about than the other two types mentioned above.

Of *barrel pumps* there are many makes variously mounted on wheels, stone boats, in wagons, etc. Two general classes are common: those mounted on end, and those mounted on their side. Of the two the latter is the better because the settlements are reduced to a minimum. In each case the handle should be attached to an agitator to keep the liquid thoroughly stirred up.

Tank and gasoline *power sprayers* are largely used for commercial work. They are beyond the scope of ordinary amateur fruit growing.

Combination Attacks

KILLING two birds with one stone is not nearly so likely a feat as killing bugs and blights with one spray. Arsenate of



The small home orchard is well served by a portable pump attached to some handy container



Where the cultivated area justifies the investment a wagon of some sort (horse or motor) will be advisable for mobility. Two men are engaged

lead added to bordeaux mixture is, if anything, more effective than when mixed with water. So applied it saves the lime of a second spraying.

It is safe, sane, and satisfactory to mix bordeaux mixture with arsenate of lead or nicotine or both. No chemical change occurs in the compound to impair the health of the plants. Similarly it is safe to mix lead arsenate with nicotine or with lime-sulphur wash provided it is a neutral not an "acid" arsenate and these three may be used together. Nicotine may be added to emulsions of oil and to soap suds. *But avoid the following:* 1, mixing paris green with lime-sulphur or soap solutions or oil emulsions; 2, acid lead arsenate with soap suds, or emulsions or alkalis; 3, emulsions with lime-sulphur wash; 4, zinc arsenite with lime-sulphur wash, or soap suds or emulsions; 5, sulphides of soda or potash with any of the arsenicals (paris

green, london purple, lead arsenate, etc.). In other words don't experiment but stick to the recommended mixtures so as to avoid damage to the foliage and the fruit.

To make self-boiled lime-sulphur wash place four pounds of fresh stone lime in a barrel or a large keg, add a little hot water at a time till slaking is complete and a creamy mixture is formed. Sift in four pounds of sulphur and mix thoroughly, cover closely and let cook by its own heat for 15 minutes. Then dilute with enough water to make a total of about 25 gallons.

Resin-bordeaux mixture sticks to hairy and very smooth (glaucous) foliage better than ordinary bordeaux. Melt 5 pounds of resin with 1 pint of fish oil over a gentle fire, cool slightly and stir in one pound of soda lye. Then add five gallons of water and boil until the mixture will dissolve in cold water. It is now ready to use at the rate of one gallon to each 25 of ordinary bordeaux mixture.

For *bordeaux mixture*, dissolve copper-sulphate (a pound to the gallon) in water, hanging the crystals in a bag which just touches the surface of the water held in a barrel or keg. In another barrel slake, little by little, fresh stone lime. When creamy add water to make a pound to the gallon. Strain out the lumps through burlap. Pour a little naphtha or kerosene on each solution to check evaporation. When ready to spray dilute each mixture so the diluents will each contain half the quantity of water called for by the formula used but *all* the lime and copper sulphate respectively. Now pour the two dilute solutions together into the spray tank. Finally test a teaspoonful of the mixture with a drop of yellow prussiate of potash dissolved in water. If any color shows add more lime and test again till no change occurs. Formulae are: 4 lbs. each of copper sulphate and of lime to 50 gallons of water for most fruits; but 6 lbs. of lime instead of four for peaches and other stone fruits.

ON "LISTENING POST"

WHEN bugs arrive, be sure to strive to find out how they eat. All those that bite, with poison fight; with caustics, suckers treat.

*PEACH AND OTHER TREES that have started their buds very irregularly and sparsely may have been "winter injured." The only remedy is to cut back the tops very severely so as to conserve the plant food and direct it all into a greatly limited area. New shoots will or should develop and form new tops. Thinning out the twigs is all that need be done—next spring. In spite of this treatment the trees may die.

MAKE the gardens that are shirking help the gardens that are working. "Gardens" strewn with weeds and stones are like beehives full of drones. Till them; make them do their duty. Stop their stealthy theft of booty.

*HOWITZERS loaded with "summer strength" lime sulphur wash (1 to 1½ parts to 40 or 50 of water) should "play" on the possible emplacements of fungi. Their work must be preventive for once the foe gains a footing it will deal deadly destruction to lopes of fruit.

LEAD arsenate paste, the tiniest taste (an ounce to the gallon of water) is the "onliest" drug that each chewing bug will need for its premature slaughter.

*Slacker bugs—there are no such creatures! Every bug is a fully armed soldier either a foe or a friend. Challenge each one and make it give the password. Be ruthless in destroying those that fail.

Better buy commercial lime-sulphur rather than attempt to make it. In fact, most of the spraying materials and mixtures may better be purchased than made at home.

*Soapsuds made from one ounce of hard soap in half a gallon of water will clean off plant-lice, red spider and many other sucking insects if sprayed on the under sides of leaves and the tips of the young twigs.

KEROSENE emulsion: One ounce of soap, one quart of oil, one pint of hot soft water; one quarter hour churn up with power. Dilute ten times, you oughter.

*The hairy caterpillars that appear during May on pear and other foliage in New England are the larvae of the Brown-tailed moth. Lead arsenate sprayed after the blossoms fall and again in August will prove effective.

*Bombard plant lice with nicotine preparations. Direct the fire to the under sides of the leaves and the tips of the twigs where the foe is chiefly entrenched.

*Halt the insidious advances of the gooseberry fruit worms by opposing a battalion of chickens kept on this front from May until midsummer when the fruit ripens.

THE saw fly has come from her winter retreat, on the gooseberry bush you will find her; she deposits her eggs underneath the first leaves in the place Mother Nature assigned her. The larvae will hatch in ten days, p'rhaps a week, if the weather conditions be kindly; at first they are whitish, have appetites meek, but they later turn green and eat blindly. These worms you may combat with lead arsenate, very simple if done while they're little; a spray when the leaves are still tender and fresh will be death if they eat the least titlle.

WHEN NOT TO SPRAY

NEVER spray while the trees are in blossom because the poisons would kill good friends, the insects that carry pollen and thus help settings of fruit. Wait till the petals have fallen before spraying.

THERE'S not a fertilizer for mountains, valleys, plains, that's worth a continental when laid 'longside of brains.

The most destructive sapper and miner is the peach borer. His tunnel is just below ground. Notice his dump of borings and gum. Follow him up his burrow and meet him with cold steel. Trust no other weapon nor means of defence, all else have failed. It's a case of "come to grips" with him.

On general principles spray the under-sides of currant leaves with nicotine solution or kerosene emulsion to destroy the plant lice that later will make the leaves look like savoy cabbage because of contortion. At that stage spraying is useless because the creatures can't be reached.

IDENTIFYING THE DIVISIONS

THE war on bugs and blights is won only piece by piece.

★Quince curculio makes knotty fruits. Treat the same way as plum curculio.

★For oyster-shell scale found on the bark of apple and many other trees storm with nicotine solution this month.

★Raspberry saw-fly larvae and several other chewing insects feed on the leaves. Lead arsenate is the remedy.

★AFTER CURRANT AND GOOSEBERRY fruits become half grown use hellebore instead of lead arsenate. It will give the worms fatal tummy ache without menacing human health. Half an ounce to the gallon of water is enough. If more convenient to apply as powder, dust it on while the leaves are dewy.

★ESPIONAGE AGENTS report a drive of rose chafers scheduled for late May and early June. Many divisions will reinforce the shock troops. Grape vines, rose bushes and raspberries are among the leading objectives. The defence must be desperate. Lead arsenate is about the only ammunition to use, but it is not safe on ripening fruit. When the first scouts appear open fire.

★CANKER-WORMS when disturbed hang by "silks" from apple trees which they defoliate if numerous. Attack with lead arsenate before the blossoms open and again soon after the petals fall. The later spray will also catch the first brood of codling moth larvae that make "wormy" apples. Tent caterpillars make ugly nests in branch crotches. Fight them like canker worms.

★CUT OFF BRANCHES and twigs of plum and cherry that show black knot wart-like excrescences. Make cuts several inches below the knots. Burn at once. Spray with bordeaux mixture to which is added 25 per cent. more lime than for apple spraying. This will not cure but will at least partially prevent further attacks.

★LEAF BLIGHT of quince also affects the fruit, making reddish-brown spots with black centres. Bordeaux mixture applied just before the blossoms open and again soon after they fall with one or two later treatments at intervals of about two weeks will prevent cracking of the fruit.

★WILTING OF LEAVES on currant twigs here and there indicates borers in the stems. Cut off several inches below the lowest wilted leaves. If the centre shows a hole cut lower still. The pith should be intact. Burn all cuttings.

★GRAPE LEAF HOPPERS, lively little yellow and red marked sucking bugs on the under sides of the leaves are best fought with nicotine solution sprayed upward. Chewing insects on grape are best controlled by lead arsenate. The treatment for rose chafer will settle them.

★PLUM CURCULIO grubs make wormy and "gummy" plums. Prevent or reduce damage by jarring the trees every morning at dawn, catching the torpid beetles in sheets and dumping them into kerosene. This work must be kept up for six weeks after the blossoms fall. Spraying with lead arsenate is only partially effective.

★**GOOSEBERRY MILDEW**—a felt-like growth on leaves and fruit, is worse on European gooseberries. Spray when the buds burst and every ten days until July first, using potassium sulphide, an ounce to three gallons of water.

★**SPOTTING** and premature falling of currant leaves may be due to anthracnose and leaf spot. Prevent by spraying with bordeaux mixture when the leaves unfold and at intervals of two weeks until the fruit begins to turn color.

★**ORANGE RUST**, like a sniper "gets" an occasional blackberry and raspberry plant. The undersides of the stunted leaves become velvety orange because of the disease. Prompt digging and immediate burning of affected plants are the only things to do.

★**BROWN ROT**, and scab of peach, plum and cherry, are best checked by spraying first after the blossoms fall, second three of four weeks later and third a month after. When only two can be given omit the first if spraying only for rot, and the last if only for scab. Self boiled lime-sulphur wash is the most reliable mixture to use.

★**SCAB OF PEARS AND APPLES** may be controlled by bordeaux mixture sprayed on the unfolding leaves before the blossoms open, again after the petals fall and a third time about two weeks later. In the last two treatments dilute the mixture somewhat.

★**PEAR BLIGHT** is of bacterial origin. Its conspicuous sign is brown leaves and twigs. Cut the twigs out several inches below the lowest affected leaf. Sterilize the knife or the wound or both with corrosive sublimate solution (1 tablet to a pint of water). Burn all cuttings promptly.

★**PREVENT SCAB** on apple and pear by spraying when the buds open, again when the petals fall and a third time about a month

Spray Mixtures in Handy Small Quantities

This table is presented for the convenience of the gardener who does not want gallons and gallons of stock solutions

SPRAY	INGREDIENT	REDUCED FORMULA
Bordeaux Mixture	Quicklime Copper Sulphate (Crystals) Water	1½ tablespoons 1 tablespoon 4 quarts
Kerosene Emulsion (Dilute 1 to 15 or 20)	Kerosene Water Hard Soap	1 pint ½ pint 1 cubic inch
Ammoniacal Copper Carbonate	Copper Carbonate Ammonia Water	2 teaspoons 2 fluid ounces 2 gallons
Arsenate of lead	Lead Arsenate (Paste) Water (or bordeaux mixture)	1 tablespoon 1 gallon
Paris Green	Paris green Water (or bordeaux mixture) Quicklime (Unnecessary if bordeaux is used)	1 teaspoon 3 gallons 3 teaspoons
Pyrethrum in Water	Pyrethrum Powder Water (Warm)	1 teaspoon 2 quarts
Poisoned Bran Mash	Bran, Middlings (or Coarse Flour) Molasses Paris green Water	1 quart 1 tablespoon 1 teaspoon 1 cup
Nicotine	Available in proprietary preparations only	Dilute with water as directed

Burgundy Mixture, which is in use in England as an alternate for bordeaux mixture, is described thus: copper sulphate 4 lbs., washing soda (salsoda) 6 lbs., water 40 gals. Materials are dissolved separately and mixed by pouring the soda into the copper solution.

later using bordeaux mixture each time. Add lead arsenate to the second and third sprays to control chewing insects.

★Prevent the **PURPLISH SPOTTING OF PLUM** leaves followed by little "shot" holes by spraying with dilute bordeaux mixture after the blossoms fall and at intervals of two weeks. This spraying will also check brown rot, black knot and other fungous troubles. Add arsenate of lead (just as if the fungicide were water) to control curculio and other biting insects.

★**SPRAY STRAWBERRIES** once or twice before any blossoms open using bordeaux mixture and arsenate of lead. This will control most plant diseases and chewing insects. Nicotine sprays will help check sucking insects but the more troublesome of these, plant lice, are best controlled by setting only louse-free plants in soil not recently cropped by strawberries.

★Those more or less confluent **WHITISH SPOTS** with purplish borders on raspberry stems are due to anthracnose. Before the buds swell cut out and burn badly infested canes and spray with resin-bordeaux mixture. When the young shoots get about six inches tall spray again and repeat in about two weeks. After harvest cut out and burn all old canes and young ones badly affected.

★**PREVENT BLACK ROT OF GRAPES** by spraying with bordeaux mixture as soon as the blossoms buds form, again after the fruit has set, and at intervals of two weeks until late July. Then use a clear fungicide that will not soil the fruit. Dipping bordeaux-soiled fruit in vinegar and rinsing in water will get rid of the stains. Downy and powdery mildew are controlled by this treatment.

Little Spraying Calendar for the Fruit Garden in May

FRUIT	WHAT TO SPRAY FOR	WHEN TO SPRAY		MATERIALS TO USE	REMARKS
		FIRST TIME	SECOND TIME		
Apple	Bud moth, case bearer, Tent caterpillar	April (see remarks)	When buds begin to show pink tips	Lead arsenate	Should have been sprayed for when the leaves first started. Spraying in May is less effectual, but still useful. This spray corresponds with the second used for the above insects. Add to above sprays "on general principles". Spray in clear weather, or before (not after) a rain.
	Canker-worms and above insects (second time)	When buds begin to show pink tips	After petals have fallen	Lead arsenate	
	Plant lice or aphids	When buds begin to show pink tips	After petals have fallen	Nicotine	
	Scab, rust, leaf spot and other diseases	When buds begin to show pink tips	After petals have fallen	Bordeaux mixture or lime-sulphur wash (1 to 40)	
Cherry	Codling moth larvae	When petals have fallen	About two weeks later	Lead arsenate	First spray corresponds with second for canker worm. Dilute bordeaux 25 to 40% and add extra lime.
	Brown rot, leaf spot	Just before blossoms open	When calyx or "shuck" is falling from fruit	Bordeaux mixture or lime-sulphur (1 to 40)	
	Curculio	When calyx or "shuck" is falling from fruit	Two weeks later	Lead arsenate	
Currant	Slug	When calyx or "shuck" is falling from fruit	Two weeks later	Lead arsenate	First spray corresponds to second for scab. So the insecticide and the fungicide may be put together. First spray corresponds to second for scab. So the insecticide and the fungicide may be put together. First spray should be done when leaves first expand. Spray upward especially at base of bushes. First spray should be given when buds are breaking.
	Curculio	April (see remarks)	First week in month (again two weeks later)	Lead arsenate	
	Leaf spot, mildew	April (see remarks)	First week in month and two weeks later	Lime sulphur (1 to 40) or bordeaux mixture	
Gooseberry	Mildew, leaf spot	Same as currant	Same as currant	Same as currant	If weather is wet give 3rd spray during month or in early June. Spray upward to hit bugs on under sides of leaves. Double strength recommended for ordinary insects. Knock into pan of kerosene. As effectual as spraying. "Dormant spray" most effective. Later ones too dilute to do much good. In wet season spray every ten days or two weeks.
Grape	Gooseberry worm	Same as currant	Same as currant	Same as currant	
	Black rot	When shoots have 3 or 4 leaves	When blossom buds are swelling	Bordeaux mixture	
	Leaf hopper	When shoots have 3 or 4 leaves	When blossom buds are swelling	Nicotine	
Peach	Rose chafer	When first are seen (usually late May)	Week or ten days later	Lead arsenate	"Dormant spray" most effective. Later ones too dilute to do much good. In wet season spray every ten days or two weeks.
	Flea beetle	When insects appear on opening buds	—	—	
	Curl-leaf	April (see remarks)	—	Lime sulphur (winter strength)	
	Brown rot, scab, leaf spot	When "shucks" or calyxes fall	Two weeks later	Self-boiled lime-sulphur wash	
Pear	Curculio	When "shucks" or calyxes fall	Two weeks later	Lead arsenate	Same as for apple insects and diseases, except dilute the lime-sulphur wash 1 to 50 instead of 1 to 40.
	Same as for apple insects and diseases, except dilute the lime-sulphur wash 1 to 50 instead of 1 to 40.	Same as for cherry	—	—	
Plum	Slug	—	—	—	Avoid by planting pistillate varieties largely; cover beds with muslin; keep beds remote from hedge rows; make new beds annually. Burn beds after harvest.
Strawberry	Same as for peach	—	—	—	
	Weevil	—	—	—	
	Leaf roller	When moths first appear and before leaves folded	—	Lead arsenate	Burn beds after harvest.
	Leaf spot, rust	When new foliage appears	Before blossoms open	Bordeaux mixture	

Spring Songs of the Garden Warrior By M. G. KAINS

Plant, Plant, Plant, the Boys are Marching

To the despot must we bend?
Must our freedom come to end?
Must deception and deceit the world delude?
Must we bow to tyrant thrones?
Must we heartless be as stones?
Must our soldiers and our sailors lack for food?

CHORUS:

Plant, plant, plant, the boys are marching.
Give them all the aid we may;
For with food enough to spare
We can help them over there
And the call of freedom thus we can obey.

Food will help to win the war,
Bind the limbs of Mars and Thor,
And their tyranny and bloodshed make to cease.
Let us each then prove his grit,
And produce his little "bit"
And establish once again the reign of peace.

Chorus.

When our sons obeyed the call
And embarked to help the Gaul
We were saddened when they passed beyond our
ken.
But in God we put our trust,
For our cause we know is just.
May they conquer and come safe to us again.

Chorus.

Keep the Home Soil Turning

We are summoned in the cities
In the villages and farms
To provide our share of rations
For the nations now at arms.
Let no fears of failure hinder
But ten thousand thousand strong
Let us cultivate war gardens
And shout this cheering song:

CHORUS: Keep the home soil turning
While the sun is burning.
Heed the call for food and till the mellow loam.
There's a silver lining
Through the dark clouds shining; [home.
Turn the dark clods o'er and o'er 'til the boys come

Keep the Home Pot Boiling A. KRUHM

Succession Plantings to Supply a Family of Five with Fresh Vegetables all the Season

EDITOR'S NOTE.—A plot of ground 30 x 60 will suffice to grow all the vegetables needed for the immediate supply of the family table till frost comes if all the space is kept always active. This table tells you how to plan for succession plantings to follow the crops sown last month so that there will be no break, unless extraordinary weather conditions intervene. No provision is here made for growing anything for canning or drying for winter supply, although there may be a small surplus of some crops, which can be "put up" as you go. Canning and storage for winter must be allowed for in addition to the quantities here given, and the management of the garden with this object will be given particular attention in next month's GARDEN MAGAZINE where special attention will be given to the varied phase of conservation for winter.

VARIETY	SCHEDULE FOR RE-PEATED SOWING	TOTAL SPACE TO SOW	SEEDS NEEDED FOR ENTIRE SEASON	DEPTH TO SOW (inches)	DISTANCE TO TRANSPLANT (inches)	FIRST READY FOR USE	APPROXIMATE YIELD PER 15 FT. ROW	REMARKS
Beans								
<i>Green podded</i>								
Bountiful	May 1-10, June 1	90 ft. row	1 pt.	2	4	June 25	8 qts.	Sow fifteen foot rows often rather than longer rows at one time. Do not gather crops while vines are wet
Stringless green pod	May 10, June 1	90 ft. row	5 pts.	2	4	June 30	5 qts.	
Stringless Refugee	June 15	60 ft. row	½ pt.	2	6	July 15	8 qts.	
<i>Wax podded</i>								
Wardwell's Kidney Wax	May 1, June 1	90 ft. row	1 pt.	2	4	June 26	8 qts.	No repeated sowings of these are practical, because of long season required to reach maturity
Burpee's Brittle Wax	May 1, June 1	90 ft. row	1 pt.	2	4	June 30	8 qts.	
Sure Crop Wax	May 1, June 20	60 ft. row	½ pt.	2	4	July 4	10 qts.	
<i>Bush Limas</i>								
Fordhook	June 1	15 ft. row at each planting	½ pt.	2	6	July 15	3 qts. shell beans	No repeated sowings of these are practical, because of long season required to reach maturity
Henderson's	June 1		½ pt.	2	6	August 1	3 qts. shell beans	
<i>Pole Beans</i>								
Lazy Wife	.....	10 hills	pkt.	2	3 plants to hill	August 1	1 qt. per hill	
Burger's Stringless	.....	10 hills	pkt.	2	3 plants to hill	July 25	1 qt. per hill	No repeated sowings of these are practical, because of long season required to reach maturity
Golden Cluster Wax	.....	10 hills	pkt.	2	3 plants to hill	August 1	1 qt. per hill	
<i>Pole Limas</i>								
Leviathan	.....	10 hills	pkt.	2	3 plants to hill	August 1	1 qt. per hill	
King of Garden	.....	10 hills	pkt.	2	3 plants to hill	August 10	1 qt. per hill	
Beets								
Eclipse	May 1-15	15 ft. row at each sowing	½ oz.	½	2-3	June 20-30	5 dozen beets per row	Press soil in firm contact with seeds (walk over)
Crosby's Egyptian	May 1-15		1 oz.		2-3	June 20-30		
Detroit Dark Red	May 1-15		1 oz.		3	June 25, July 5		
Edmand's Blood	May 1-15		½ oz.		3	June 30, July 10		
Cabbage								
Early Jersey Wakefield	Set out plants at once } Sow seeds on May 15th for winter crop	12 plants, 15 ft.	Buy early plants One pkt. seed enough for several seasons	½	1 in. in seed bed	June 15	1 dozen heads from every 15 ft. row	Use quickly Use secondly Keeps well Resists hot weather Best late
Copenhagen Market		24 plants, 30 ft.			18 in. in garden row	June 18		
Allhead Early		24 plants, 30 ft.				July 1		
All Seasons		12 plants, 15 ft.				August 15		
Premium Flat Dutch		24 plants, 30 ft.				Sept.-Oct.		
Chard								
Lucullus	May 1-15	2-15 ft.	½ oz.	½	1 ft.	July 1	Leaves cut continuously according to growth	
Corn, Sweet								
Peep o'Day	May 15	30 ft. row	pkt.	2	1 ft.	July 15	2½ dozen ears each	Sow 2-15 ft. rows each planting date
Golden Bantam	May 15-30, June 15-30	120 ft. row	pt.			July 25		
Evergreen	May 15	30 ft. row	pkt.			August 7		
Country Gentleman	May 15	30 ft. row	pkt.			August 15		
Lettuce								
Black Seeded Simpson	May 1, 15	30 ft. row	pkt.	1 to ½	First 4 in. later 12 in.	June 15	15 heads per row	Plant a 15 ft. row each sowing, for midsummer and fall use
May King	May 1, 15, Sept. 1	45 ft. row	½ oz.			June 20		
California Cream Butter	May 1, 15	30 ft. row	pkt.			July 1		
All Season	May 1, 15, 30	45 ft. row	½ oz.			July 10		
Iceberg or New York	May 1, June 1, 15	45 ft. row	½ oz.			July 10-15		
Onions								
White Portugal	May 1st	15 ft. for each sort, 75 ft. in all	pkt. each kind	1 to ½	4 in. apart	July 25	1 bu. of bulbs	Set out 30 ft. of row of yellow and white sets on April 10 for green onions
Southport White Globe						August 5		
Yellow Globe Danvers						August 10		
Red Wethersfield						August 25		
Prizetaker						Sept. 1		
Peas								
Extra Early	May 1	30 ft. row	½ pt.	2	Drop 2 seeds to every inch space	June 15	4 qts. pods 8 qts. pods 8 qts. pods 8 qts. pods 10 qts. pods	July planting for fall crop Tall sorts. Support with brush or twine
Little Marvel	May 1, 15, July 10	90 ft. row	1 pt.			June 20		
Thos Laxton	May 1	30 ft. row	½ pt.			June 24		
Alderman	May 15	30 ft. row	½ pt.			July 15		
Imp. Stratagem	May 15	30 ft. row	½ pt.			July 20		
Potatoes								
Irish Cobbler	A late planting possible early in May	100 ft. of row	½ bu. for every 100 feet of row	4 to 5 inches	Pieces 6 to 8 in. apart in row	Early in August	½ bu.	Plant 5 in. deep in light soil 4 or less in heavy clay
Six Weeks								
Early Rose								
Radishes								
Scarlet Globe	May 1, 15, 25	45 ft. row	½ oz.	½	1 2 3 3 4 to 6	June 1	15 dozen 10 dozen 8 dozen 8 dozen 2-3 dozen	Spring sorts Spring sorts Spring sorts Summer variety Winter variety
White Icicle	May 1, 15, 25	45 ft. row	1 oz.			June 5		
Cincinnati Market	May 15, 25, 30	45 ft. row	1 oz.			June 15		
Chartiers	May 10, 20	30 ft. row	½ oz.			June 25		
White Chinese	June 1	15 ft. row	pkt.			Oct. 1		
Tomatoes (Red)								
Spark's Earliana	May 25	Plant 2½ ft. apart each way, tied to stakes	12 plants	from 8 to 10 in. apart	bed	July 1	3 doz. fruits per plant	108 plants in all Prune to 3 strongest branches; remove all suckers
Chalk's Jewel	May 25		24 plants			July 10		
Stone (best for canning)	May 25		24 plants			July 25		
Purple								
June Pink	May 25	Plant 2½ ft. apart each way, tied to stakes	12 plants	from 8 to 10 in. apart	bed	July 1	3 doz. fruits per plant	108 plants in all Prune to 3 strongest branches; remove all suckers
Globe (fine for slicing)	May 25		24 plants			July 6		
Ponderosa	May 25		12 plants			July 25		

Getting the Most Out of Dahlias ORRIN E. DUNLAP

Successful Late Planting—Air Drainage and Protection from Early Frost

IT WAS on May 18, 1914, that I placed an order for fifty varieties of this grand autumn flower. I had asked the grower from whom I purchased to give personal attention to a selection of the bulbs, and because he was in attendance at various Conventions, as I was informed, his office force did not fill my order until the latter part of June. However, I made the planting on July 2nd. I watered them carefully, fertilized and cultivated them in order to give them every advantage of growth, having in mind the seeming late planting. The results I obtained were thoroughly satisfactory, the fall crop of bloom being all that anybody could wish for.

This was an inspiration, and for 1915 I planned for an increase of varieties, also earlier planting, and I was not unmindful of the fact and apparent possibility that could I protect the plants from the early frost I would extend the flowering season a considerable period. With this object in view, after my plants attained fine growth, during the summer of 1915 I erected over them a frame work over which I could draw cotton sheeting in order to ward off the frost. I had read that even cheese cloth would give considerable protection from frost, but in order to be thoroughly safe I purchased cotton of nice weight and thus secured what, in my judgment, should be a substantial covering. I had this cotton sewed so that each sheet consisted of three strips and in covering I extended it from the fence over the top and nearly to the ground in front of my Dahlias. One strip thus covered was about 16 feet long by 50 wide, while the other strip thus covered was about 27 feet long and 16 wide.

LOVERS of Dahlias can appreciate the satisfaction I felt the first cool night when the covering was in place. To stand beneath it and look over the plants with their full bloom and bountiful buds was an inspiration and in fancy I enjoyed the future flowers from my plants apparently so well protected. The temperature dipped and it became quite cool, and I derived considerable satisfaction from the preparation I had made to protect my Dahlias. To be under the covering was to experience a very similar enjoyment to that in a greenhouse. My neighbors admired the protection and agreed

that I would have nice flowers very late in the season.

The first frost in my vicinity occurred on the night of September 28th. On the nights of October 24th and 25th there were very heavy frosts and my Dahlias were killed. Their blackened appearance in comparison with the white sheets gave me a sense of mourning that was depressing, and in my heart I felt that I had not profited to the expenditure and trouble I took to gain protection.



To look over the plants with their full bloom and bountiful buds is an inspiration
(Miss Margarita Fischer)

PERHAPS what I saw on my way to the office each morning doubly impressed me with this conviction. Each morning my route to the office took me by the home of Mr. C. L. Krull on Erie Avenue, Niagara Falls, N. Y. His place of residence is in the same city about two miles to the south of my home, and his location is about two or three blocks from the Upper River, while mine is about the same distance from the Gorge and Lower River. Mr. Krull had a few Dahlias in his front yard, and each morning they waved back and forth in the wind, apparently danced in glee at their being alive after the cold spell. The plants were in full bloom and the foliage was untouched by frost, this without the slightest protection having been given to them. Each morning I compared their beauty with the blackened, frozen appearance of my plants to protect which I had taken so much trouble. On the

night of November 15th frost slightly touched the Krull plants, and on the night of November 16th frost and snow handled them more severely, but they did not give up their beauty and life until the nights of November 17th and 18th, when they were blackened in full bloom. *On that date my Dahlia bulbs had been dug and placed in the basement of my home.*

It is worthy of note that on the night of November 17th thin ice formed in my henry which has double walls and is considered quite a warm house, while the Krull Dahlias standing out in the open were not so badly frozen the night of November 18th having finished their beauty and by the morning of November 19th the Krull Dahlias were through blooming for the year.

THIS seemed to me a strange experience with plants of the same kind and character in the same city and within a comparatively short distance of each other. My curiosity was aroused and from the City Engineering Department I learned that the difference in elevation between Erie Avenue and Cleveland Avenue at the corner of Main Street is 11.89 feet, while the corner of Cleveland Avenue and Eleventh Street, a street just east of my home, the difference of elevation between Erie Avenue is 1.89 feet lower. These figures indicated that while from Erie Avenue to Cleveland Avenue the difference in elevation is 11.89 feet, Erie Avenue

being the higher point, that the front part of my residence place is not much lower than Erie Avenue, but there is a dip in my garden so that we may assume that the difference in elevation between the Krull garden and my garden is about 10 feet, my garden being the lower of the two and possibly about the lowest point in the city. It may have been that the influence of the broad Upper River had considerable to do in protecting the Krull Dahlias, while possibly there might have been a little more wind in that section, but this fact is not generally recognized. The Krull Dahlias grew to a height of about five feet, while my Kalif Dahlias attained a height of at least eight feet, while other Dahlias I had grew equally tall. In fact the growth of all but three of my Dahlias was remarkable, due to fertilization, cultivation and watering. The three Dahlias which were an exception were planted in a spot equally advantageous



Though quite a protection against light frosts, this cotton covering did not overcome the disadvantages of a low location of garden



Because late planting flirts with early frosts, a framework was erected which later supported the cotton cloth

as the other, but nothing that I could do would inspire them to grow higher than about a foot and these three plants right in a row remained stunted throughout the season. If memory serves me, in putting away my Dahlias I marked these three "dwarfs," and this season I expect to give them special attention in order to determine their growing qualities. I am sure they were not dwarf-like in 1914, as I feel they were among my first plants.

As I approach the 1916 planting my thought goes out to the fall and I wonder what I shall do toward protecting the Dahlias next fall. My conclusion is that if I desire to enjoy them as late in the season as possible it might be better to take them up along Erie Avenue

and let the residents there plant them in order that I may see them as I go by, and then instead of being robbed of their beauty in September or October I might enjoy them until at least the middle of November and this without the expense of frame work and covering.

The spring and summer of 1916 were remarkable for the quantity of rainfall, and I lost many valuable Dahlia plants through their being cut off by snails, all protective substances being quickly washed away by the rain. Frost came early, the result being I had less than a dozen blooms from many plants. However, after my success of 1915, this failure of 1916 simply served as an inspiration, and I welcomed the spring and summer of

1917, with a determination to outdo my display of 1915. I was successful in a marked degree, but I may say that imported pot grown tubers either did not sprout or they failed to reach maturity. I had many others, however, so that when the early frost came their blighted hope and beauty presented a very sad sight. There were some flowers which in the fullness of their bloom, made you feel you wanted them to last forever. The majority of these were raised from seed, and as I watched them grow I wondered if professional Dahlia growers had flowers of such beauty.

The battle for the beauty of 1918 has already commenced, my seedlings are up nicely, and I have brought to my collection a few of the Mastick beauties.

Varieties of Gladiolus for the Novice MONTAGUE CHAMBERLAIN

Real Gems Are to Be Had at Low Prices and Will Give a Rich Harvest of Bloom if Planted This Month

TO A novice in gardening a seedsman's catalogue is quite bewildering and in Gladiolus alone he finds himself confronted with an array of names and descriptions and a range of prices that force him to pause and think. He wants some of the bulbs to plant in his garden, but how can he determine which to choose? We shall try to help him.

IF HE be wise, the novice will begin in a small way, say by planting a half dozen bulbs each of about six or eight sorts, for these will yield an interesting combination of colors and forms—these flowers differ widely in form—a combination that will make an attractive addition to the garden and a delight for house decoration. Also (if he be wise), he will at the start, select these varieties from the cheaper sorts. He will be apt to think that these cheap sorts are of poor quality, but that is

a mistake, for, as a rule, these bulbs are cheap only because they are extremely abundant. They happen to be unusually prolific and have been cultivated for a number of years. Among them are some that are classed with the beauties of the Gladiolus world—flowers that display both exquisite coloring and graceful form—flowers that he will want to retain in the garden long after he has passed his novitiate.

IN COMPILING such a list we can do no better than head it with *America*—an exquisite thing. The individual blossoms vary somewhat in color, from a pale lavender pink to a soft shell pink and melting to a pinkish white. This is delicate coloring, but the petals are of good substance, the spike is strong and straight, the stem is tall, the leaves are wide and long and the entire plant shows strength and vigor.

For a brighter pink we would choose *Halley*, another beauty, wearing a soft but rich salmon tone. *Halley* blooms very early and this combined with its splendid color and the rare grace of its lily-like blossoms, have made it a prime favorite. The blossoms are large and heavy and the stem being a bit slender requires some support. For such support a light bamboo rod does admirably, but if this is not available a slight birch branch will be quite as useful.

Another early bloomer that the novice should put on his list is *Pink Beauty*, showing a rich rose pink, with a patch of deep crimson in the throat. The blossoms of this variety are not large but a number open together, and coming before any of their fellows have appeared they are delightfully cheering.

Another rose pink, but of quite a different tone, is *Madame Moneret* which has large blossoms and blooms late in the season.

Independence is a splendid sort for out-of-door effect. The stem is tall, straight and strong; the blossoms are large and of a rich flame pink and the general appearance of the plant in flower is brilliant and imposing.

A rival of *Independence* is the splendid variety named in honor of Mrs. Francis King. Its color is flame pink but rather lighter than that of its rival though its immense blossoms produce a fine effect. The stem is rather slender to hold the heavy flowers and requires support.

An old stand-by, that every Gladiolus

grower wants in his garden, is *Brenchleyensis*, vivid-scarlet. The blossoms are of medium size, but as a number appear together, and are well placed on the spike, the effect is striking.

A YELLOW flower is useful to combine with other colors in house decoration, and for this we have a choice of three good sorts among the low priced Gladiolus, *Annie Wigman*, *Canary Bird* and *Spring Song*. *Annie Wigman* has the deepest hue but wears a patch of greenish yellow and red on the inferior petals. The others are of lighter tone but are attractive. *Spring Song* has slight suffusion of pink which adds to its daintiness, and when a few spikes are combined with *Baron Hulot*, they make a rich and handsome bouquet.

Baron Joseph Hulot, to give the variety its full title, is usually described in the catalogues as "blue," but the hue is purplish violet, the color known in England and France as "Bishop's violet." The blossoms are of



Properly displayed in appropriate receptacles, Gladiolus becomes one of the most charming and most lasting of decorative cut flowers



An orderly method of supporting the flower spikes in the garden helps the individual flowers to appear to best advantage

medium size and well set on the spike. It is far away the best purple *Gladiolus* yet produced.

A white *Gladiolus* is useful both for garden effect and for cutting, and here again there are several from which to make a choice. The white tone in *Meadowvale* is good but there is a dash of pink on the lower petals and a patch of crimson in the throat. The flowers are of good size and well formed. *Augusta*, *May*, and *Shasta* have much the same habits—medium sized blossoms appearing in numbers on a straight spike. *Shasta* has the purest color, and has white anthers—which is rarely found, the anthers in white *Gladiolus* being usually of a pinkish tint. It will be found a very satisfactory sort. *Augusta* was for a long time called the best commercial white and is still largely used by florists.

May is also a good sort though, like *Augusta*, it is more or less suffused with pink.

The amount of pink color appearing in these white flowers varies in different seasons, for if the sky is continually clear, and the air is dry, the pink color becomes more prevalent. This "pinkening," as the growers call it, may be avoided by cutting the spike when the first blossom opens and allowing the remainder to open in the house. Indeed the best color of many varieties is obtained by letting the blossoms open under cover from the direct rays of the sun.

THAT completes the list. In making the selections only the least expensive bulbs have been considered, but the sorts mentioned are all well worth growing. The plants are vigorous and will flourish in any ordinary

garden soil even without special care. If they are given an extra allowance of fertilizer and plenty of sunshine and an occasional watering during a dry spell they will repay for this attention by displaying improved blossoms. Without this additional encouragement they will prove satisfactory, and as they can be obtained for a small sum they will not prove a costly experiment if they should be lost. But they need not be lost. If they are taken from the ground in the autumn when their leaves turn brown, and are put in a cool but frost proof cellar, they can be planted again the following spring with the certainty of their making as good a display as was produced in the first season. They may make a better display if the gardener blundered and learned the lesson of those blunders.

Keeping Up Appearances in the Flower Border

LOUISE B. WILDER

Author of "My Garden" and "Color in My Garden"

KEEPING the borders in good order during the summer is a simple matter if a few tasks are faithfully performed.

The first and most important of these is staking; a matter in which all our ingenuity may be employed. If not done at all or if badly done, the finest garden will, after the first hard storm, be a sad spectacle. In exposed gardens there are few plants of more than medium height which do not require support; and even in sheltered gardens, it is best to stake all fairly tall plants that have slender stems.

The most important point about staking is that it shall be done as inconspicuously as possible and in such a manner that the plant is not diverted from its natural habit of growth. The green wooden stakes, for sale by all seed houses, are best adapted for most purposes.

Plants with a single stem, such as Lilies, Foxgloves and Mulleins, may have the stake (always considerably shorter than the full height of the plants) placed behind the stem and secured with green raffia, about the centre of the stem, leaving the upper half to curve gracefully at will. It may be necessary to change the stakes once any way during the growth of very tall plants, and such strong growing plants as Mulleins, Hollyhocks, and Dahlias will require very heavy stakes.

Plants with many stems, such as *Boltonias* and *Heleniums*, should have several heavy stakes placed in and about the clumps with strong cord stretched from stake to stake, thus allowing all the stems to maintain their natural position while still being upheld. The fine appearance of such plants is quite spoiled if they are bunched together and tied to a single stake.

Plants with long, weak stems and broad, heavy flower heads, as *Michaelmas Daisies* and *Gypsophila paniculata*, are best supported on pea brush, the weak stems being drawn over and tied to the spreading branches of the brush. When the plants have attained their full height any unsightly ends of the brush may be cut off.

REMOVAL of all withered flowers is of considerable importance in the fair appearance of the garden. The self-sown seedlings of many plants, *Phlox* for instance,

are a real nuisance; and besides this, most annuals, and a fair number of perennials, may be kept in bloom for a greatly lengthened period if the plants are not allowed to seed. This is particularly true of *Moonpenny Daisies*, *Geums*, *Erigeron speciosus* and the hardy *Cornflower*, *Centaurea montana*. The blooming period of *Phlox*, *Mulleins*, and *Anchusas* may be extended if the flower stalk is cut just below the lowest blossom. Auxiliary flower stems will then be sent out at once.

Foxgloves may be bewitched into perennialism if the flower stalks are cut to the ground immediately after fading. Hardy young plants will form around the old crown. This is also true of *Hollyhocks*.

Many low growing plants, such as *Pinks*, *Aubrietias*, *Iberis*, *Cerastium*, *Sun-roses* and *Golden Alyssum* are much benefited by a severe shearing after their bloom is past; otherwise they are apt to become very untidy in appearance.

IN THE summer care of the garden, cultivation of the soil is more important than watering. The latter should not be done at all unless thoroughly—that is, the soil soaked at least two inches below the surface. Our own method is to stick the rake handle in the ground, placing the hose nozzle through the tines and allowing it to remain in one spot for several hours. In dry weather it takes two or three days to get all round the garden, but the effort is lasting and when this method is used, the watering may be done in full sunshine without injury to the plants.

The soil of the beds and borders should be kept well stirred always, as this not only conserves the moisture but does much toward discouraging weeds. We always stir the soil after a heavy rain, for the soil is then most apt to form a hard crust.

Combinations for Spring Pictures

TWO pictures last spring gave me so much pleasure, that I feel impelled to tell about them in case some gardening neighbor may care to add them to the beauty of his own garden by planting this fall.

The first shines forth in a partially shaded

corner of the garden in front of and reaching back beneath a group of Persian Lilacs and Laburnums. Here the ground is thickly set with the lovely *Muscari*, so aptly named *Heavenly Blue*, with the graceful little *Wood Tulip* (*Tulipa sylvestris*), and dotted about between them, to spread its delicate greenery when the *Grape Hyacinths* and *Tulips* are past are tufts of the baby *Meadow Rue* (*Thalictrum minus* var. *adiantifolium*). The *Wood Tulip* is a special delight of the spring and not nearly so well known as it deserves to be. It has small, warm yellow flowers slightly bronzed on the outer sides of the petals, that open widely and send forth the delicious perfume of hothouse Violets. The slender stem of the tulip rises several inches higher than the bright blue *Hyacinth* spikes that pierce the waving canopy of yellow flowers with a quite enchanting effect. This, I think, would be a nice group for the rock garden as all the units are small—the *Meadow Rue* rising to not more than eight inches in height. *Tulipa sylvestris* requires two seasons in your garden to become sufficiently at home to bloom, after that is most reliably constant if your conditions are at all to its mind. Here it is pleased to be most gracious, and has started numerous colonies on its own account—one right in the gravel at the edge of the path.

The second picture is to-day, May twenty-first, in full beauty. A white flowered *Wistaria* covers a shallow cedar pergola that spans a garden path and constitutes itself a most felicitous background for the rose-wrapped branches of a *Crabapple tree* (*Pyrus floribunda*), that reach out against and through the pendant sprays of white flowers. Groups of rose-red *Tulip Pride of Haarlem* and drifts of still lingering *Arabis* repeat the colors from the ground. This picture is inexpressibly gay and charming and gives us the added pleasure of a fine blend of perfumes.

There is one more bit so fresh and pretty in its scheme of decoration that it seems to ask for mention. It lies along the end of a north border and is composed of the snowdrift *Phlox* and scarlet *Geums* and the tall *Poet's Narcissus* known as *Edward VII*. Between these plants are tufts of *Carpathian Bluebell*, blue and white.



The GARDEN MAGAZINE GUIDE TO GARDEN BOOKS



WHEN the war garden movement got under way last year there also was born a demand for practical manuals of instruction for the uninitiated as well as for those who, though not entirely new to the art of gardening, yet were not adepts in the refinements of management, intercropping and succession plantings, to say nothing of masterful manipulation of the available space. It was but the natural course of events that led to the appearance of several books by different publishers this spring, each one designed to be the last word in meeting the situation so that the amateur gardener is now landed at the other extreme of his difficulty—last year practically nothing available; this year an abundance, among which choice is difficult. Not all the books that have been brought into the public eye at this time are really new and some indeed are quite old—merely new titles to “get a ride” on the popular wave. In the ten or a dozen books that are offered for approval, each one has its individuality, however, and each one has certain elements of merit. The book that will best suit the individual will depend entirely on what that individual’s previous knowledge and experience have been, as well as present requirements. The home gardener who wishes to confine his attention strictly to intensive food production is catered to very definitely in the newer books.

“Everyman’s Garden In War Time,”¹ by Charles A. Seldon, one of the “resurrections,” was formerly entitled “Everyman’s Garden Every Week” and is a reliable manual on general garden practice, and follows the calendar week by week in outlining the periodical activities. This is supplemented by a condensed calendar of operations.

Somewhat similar in scope, but more comprehensive and new, is Mr. Rockwell’s “Around the Year in the Garden,”² which has the peculiar merit of not only stating what should be done but taking time to explain the reason behind the action. It is one of the best rounded out, general handbooks of the all round garden that has come from the press. Mr. Rockwell’s writings in part are by no means unfamiliar to the readers of THE GARDEN MAGAZINE and the material that has previously appeared in these columns has been freely drawn upon in making this book.

Less bulky and perhaps more direct in its point of view, is Frances Duncan’s “Home Vegetables and Small Fruits,”³ which has been written with a definite idea of meeting the requirements of the times. It assumes the possession of a small garden and the desire to make it as useful as possible while still retaining the element of beauty. It approaches the problem with a sense of friendship and companionship with which the reader is car-

ried through from the simple elements to the growing, handling, drying, canning and preserving of the harvest. A good word is found for dwarf fruit trees, and the plans for combination and succession plantings will appeal to the suburban gardener with a 30 x 40 garden plot. Exception might be taken to some of the suggested “trick” methods of cultivation, which, though not recommended by the author, are submitted as possibilities for consideration. But then many people like to play these little experiments. Altogether Miss Duncan’s book accomplishes a great deal for its size, and always has the viewpoint of the householder.

“Home Gardening—Vegetables and Flowers”⁴ by Benjamin F. Albaugh, originally published a few years ago as “The Gardenette,” is an appeal to expand on a pet hobby of the author, and exploits a peculiar practice of gardening woven around the “sandwich system.” Instead of laboriously digging the ground, build your garden on top of the ground! Put down a layer of straw or strawey manure, to any desired depth, and cover this with a layer of soil. Of course, there must be boards to hold the beds and the availability of ample manure or straw is absolutely essential. When in doubt which sorts to recommend, the book confines itself to the best or most popular—a safe course to pursue. Ninety-four of the one hundred and thirty-eight pages are devoted to vegetables. Sowing and planting tables are included, as is a glossary of garden terms not readily understood by the newcomer.

“Garden Steps,”⁵ by Ernest Cobb, frankly described as a “manual on vegetable gardening for the amateur,” definitely confines itself to the field of school and home garden. It deals, in systematic fashion, with all the essentials of vegetable gardening, resorting to occasional illustrations which are designed to stimulate popular interest rather than to illustrate a certain point. The different classes of vegetables are treated in alphabetical order and each chapter tells sufficient for the amateur to make his garden efforts productive.

The real vegetable gardener who wants the best that a fertile soil and skillful management can produce will turn to Mr. Adolph Kruhm’s “Home Vegetable Gardening From A to Z.”⁶ The book is constructed on a novel plan—half of every page is an illustration that elucidates the accompanying text, and each page is given to an individual topic. Accompanying these are a number of pages with color plates of typical vegetables and discussions of the comparative merits of the better types and strains. Specific information about varietal behavior sparkles all through the text, and the steps of progress in handling the soil and the crop from spring to

fall are detailed one by one, and each in turn. The real service that “Home Vegetable Gardening” will render is in making it possible for the tyro in gardening to work with the same precision as regards crop development as does the expert seedsman. The author, trained as a seedsman, takes the reader into his confidence professionally.

“The Backyard Garden,”⁷ by Edward I. Farrington, meets as nearly as any book can, within the limits of 190 small pages, the needs of the beginner striving to avoid the many pitfalls to his enthusiasm which every first garden is bound to put in its maker’s path. At the same time, it gives such concise directions regarding many advanced methods of gardening that it will prove a valuable addition to any home gardener’s reference library. Those in charge of school and community gardening will appreciate the volume for its practical classification of the different vegetables. There is not a single impractical piece of advice in any of its chapters. Thoroughly indexed and bound in waterproof covers.

“School and Home Gardening,”⁸ by Kary C. Davis, is preëminently a book by a teacher for teachers or others in need of a dependable adviser for guiding any gardening efforts in the right directions. Within its 350 pages it endeavors to cover the whole subject, from vegetables and flowers to shrubs and trees. Like other books intended primarily for school use, it abounds with suggestions for practical demonstrations and exercises, all of which are useful in getting the pupil to understand the fundamental principles of gardening. There are many helpful tables, calendars, etc., which, however, would hardly stimulate the average boy, girl or grown-up to go out and dig, rake, and sow seeds. The educators of the country will find it a splendid garden primer, talking, as it does, in the authoritative language that teachers use and value.

The Patriot’s Edition of “The Home Garden,”⁹ by the late Eben E. Rexford, is one of the many books of this popular writer which, in their day did much in moulding opinion on gardening. Written in easily understood, practical language, “The Home Garden” still serves the purpose for which it was written, viz., to stimulate interest in the making of food gardens, including berry patches and small fruit plantations. Some of its 9-year-old advice, however, is in need of revision in the light of more recent developments.

If there could be such a thing as any one book being the best on a subject, that verdict might reasonably be accorded to Professor Findlay’s “Practical Gardening,”¹⁰ the most

(Continued on page 198)

¹EVERYMAN’S GARDEN IN WAR TIME by Chas. A. Seldon. pp. xiv + 338 including index. Cloth, 5 x 7½ in. Price, \$1.35. (New York, Dodd, Mead & Co.)

²AROUND THE YEAR IN THE GARDEN by F. F. Rockwell. pp. xx + 350 including index. Cloth, 5½ x 7½ in. Illustrated by halftone inserts. Price, \$1.75. (New York, The Macmillan Co.)

³HOME VEGETABLES AND SMALL FRUITS; THEIR CULTURE AND PRESERVATION, by Frances Duncan. pp. xiv + 184 and index. Cloth, 5 x 7½ in. Illustrated with halftone inserts and drawings in text. Price, \$1.40. (New York, Chas. Scribner’s Sons.)

⁴HOME GARDENING—VEGETABLES AND FLOWERS by Benjamin F. Albaugh. pp. 138 including index. Cloth, 7½ x 5½ in. Illustrated by halftone inserts. Price, 60c. (New York, Grossett & Dunlap).

⁵GARDEN STEPS by Ernest Cobb. pp. 226, halftone illustrations in the text. Cloth, 4½ x 7 in. Price, 60c. (Boston, Silver, Burdett & Co.)

⁶HOME VEGETABLE GARDENING by Adolph Kruhm. pp. vi + 280, and index. Cloth, 4½ x 7½ in. Profusely illustrated with halftones in text and 32 color plates. Price, \$1.25. (Garden City, Doubleday, Page & Co.)

⁷THE BACKYARD GARDEN by Edward I. Farrington. pp. x + 191 including index. Cloth, 4½ x 7½. Illustrated by halftone inserts. Price, \$1.00. (Chicago, Laird & Lee.)

⁸SCHOOL AND HOME GARDENING by Kary C. Davis. pp. xvii + 353 including index. Cloth, 5½ x 7½ in. Profusely illustrated with halftone inserts in the text. Price, \$1.28 net. (Philadelphia, J. B. Lippincott.)

⁹THE HOME GARDEN by Eben E. Rexford. pp. 200, including index. Cloth, 5½ x 7½ in. Illustrated by halftone inserts. Price, \$1.25 net. (Philadelphia, J. B. Lippincott.)

¹⁰PRACTICAL GARDENING by Hugh Findlay. pp. vii + 388 including index. Cloth, 5½ x 8½ in. Profusely illustrated with halftone inserts and drawings in text. Price, \$2.00 net. (New York, D. Appleton & Co.)

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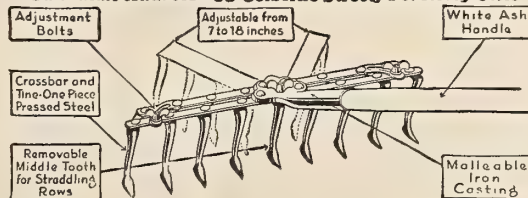
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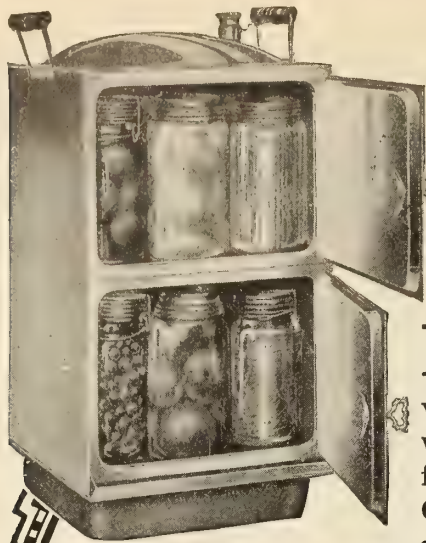
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COLD PACK
CANNING

(Concluded from page 196)

comprehensive book on the subject published this year; and it will be many years before anything more helpful will come to the assistance of the many who seriously consider home gardening in all its phases. The author has succeeded in dealing with the subject in the broadest possible fashion by incorporating in his book much of the best material published by other writers on the subject. Thus GARDEN MAGAZINE readers will not be surprised to find figures, and many tables on vegetable varieties by Mr. Kruhm, which first appeared in our own columns. Every chapter of this 400 page book, which includes small fruits, fruit trees, community gardening, and what to do month by month, bears witness to the practical knowledge of the author. The information given is uniformly reliable; the advice on what to do, how and when, is applicable to a wide territory. Gardening America, amateur and professional alike, owes a debt of gratitude to the author for such an illuminating contribution to current garden literature.

Another cultural manual is reoffered in "Putnam's Vegetable Book," by Mae Savell Croy, a disjointed grouping of paragraphs relating to the various vegetables passed under consideration. As a reference book of practice and reminder in management, it may have its use, but a close reading suggests that the author, or compiler, lacks practical acquaintance with the soil, and exception might be taken to some of the author's statements in endeavoring to correlate cause and effect.

¹PUTNAM'S VEGETABLE BOOK by Mae Savell Croy. pp. vii + 258, and index. Cloth, 7½ x 5 in. Price, \$1.50. (New York, G. P. Putnam's Sons).

For the convenience of the readers the Editorial Dept. of THE GARDEN MAGAZINE will undertake the purchase of books that may be desired. Add ten per cent. to cost to cover postage.



FOR THE SOUTH

WITH us May is "The maddest, merriest month." There is a mad riot of color. Everything is giving of its best. The tall, graceful Darwin Tulips, the Irises, Peonies, and Roses, the choicest of flowers—are in full bloom. Eternal vigilance is the cost of all this beauty, for disease and insects get in their deadly work. There is the rose chafer to combat, and the brown spot of the leaves, and the mildew on the climbers; on the Hollyhocks and other plants is rust; while aphids beset the Cornflowers, Chrysanthemums, and Peonies.

If one began spraying in March, just as the leaves appear, much trouble would be averted; but a bi-weekly spraying is necessary for some plants and this month the spraying material should be summer strength so as not to burn the leaves. The formula to be used at this time is two pounds of copper sulphate, five pounds of unslaked lime to fifty gallons of water. Add to this quantity of bordeaux one and one-half pounds of arsenate of lead. Mix the sulphate, lime and arsenate of lead each separately with a little water to dissolve thoroughly before mixing them together, and then add the remainder of the water, stirring

(Continued on page 200)

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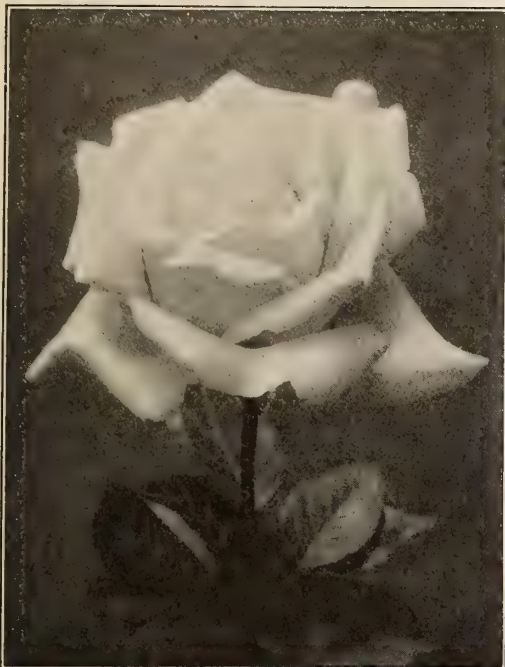
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Think How You'll Enjoy a Rose Garden in June!



MRS. JAMES LYNAS—H. T., strong, vigorous, upright, branching growth, flowers very large, full, and beautifully formed, producing

An Abundance of Beautiful, Fragrant Roses for You!

WE can fill your order, regardless of quantity. Our cellars are full of splendid, dormant, budded, field grown, three-year-old plants. They are waiting for your order and are ready for immediate planting.

After seeing this stock, you would be quick to realize its difference from ordinary rose-stock. It should not be confused with small, pot-grown stock sold by some concerns.

freely and continuously throughout the season. Color is pearly pink at base of petals, flushed delicate pink at the edges and on reverse side. One of the most attractive garden roses, and an exhibition variety of unusual merit. Strong, two-year-old, budded, imported, dormant stock, 60c. a plant, \$6.00 a dozen, \$40.00 a hundred.

It is not possible to describe all of our varieties in this advertisement—you will find them all listed in our catalogue;—which we will gladly send you if you do not have it on file.

Including All the Newest Varieties and kinds, such as Ophelia, Hoosier-Beauty, Sunburst, Duchess of Wellington, and over one hundred varieties of the best Hybrid Teas, Baby Ramblers, Polyantha, Perpetuals and Climbers.

If customers wish, we will make selection if we are advised types and colors you prefer.

We absolutely guarantee our stock to give satisfaction, and stand back of every plant that leaves this establishment.

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Importers and Growers of Chrysanthemums, Roses, Carnations and Hardy Perennials

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Hardy Fern and Flower Specialist

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Trillium Erectum
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Dicentra Canadensis
(Squirrel Corn)



Sanguinaria Canadensis
(Blood Root)

Mr. Farr Invites You to Visit Wyomissing



The first week in June to see the riot of color produced by the many acres of Peonies and Irises, which are then in the height of their glory.

Every year a multitude of people come by train, or motor long distances, to see the glorious sight. A visitor from California declared that nothing in that land of flowers would equal the gorgeous display.

There is no more beautiful section for a motor trip. Bayard Taylor, after a world-wide journey, declared that he had seen no more beautiful sight than that from Mt. Penn near Wyomissing.

For several seasons Mr. Farr and his associates have given their entire time at this period to their visitors. As the season will vary somewhat, intending visitors should write the last week in May for information; we will then advise you of the most favorable date and arrangements will be made to meet you at the station.

If you are unable to get here don't hesitate to write for any information you desire about Peonies, Irises, or other plants in your hardy garden. If you do not possess a copy of *Farr's Hardy Plant Specialties*, send for it at once and it will be sent free of charge.

BERTRAND H. FARR

WYOMISSING NURSERIES CO.

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Wyomissing, Penna.

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BUSHES, plants, vines must have some kind of support and protection in order that they may grow most luxuriously. The best for the purpose, the one that combines beauty in itself as well as proper construction for endurance, is always the cheapest in the end.

Trellises and bed guards repay many times over in plants, blossoms, and foliage. The Excelsior Rust Proof Trellis on the end of the porch shown here not only supports the vines, but is ornamental as well. The bed guards are of the same make—same construction and materials. These

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RUST PROOF**

Trellises and Bed Guards

are made of heavy, tough, springy steel wires, which are held at every intersection in the viselike grip of the Excelsior Steel Clamp, a patented feature. AFTER making, the whole fabric is galvanized by the Excelsior Process, that not only makes it rust proof, but thoroughly and completely solders it into one rigid mass.

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PRICES, including copper wires for attaching

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At All Good Dealers

or sent postpaid upon receipt of price

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(Concluded from page 198)

constantly. The bordeaux is a preventive against disease, and the arsenate of lead destroys the larvae of insects. Cabbage worms can be eradicated with slug shot, a powder to be pumped on with a dry-spray pump.

Weeding and Feeding

ILL weeds grow apace" and the gardener has to get busy with the weeding hoe to keep them from getting the upper hand. Some one has said that weeds were the gardener's best friend, for in the process of ridding the garden of them a dust mulch is formed which is essential to conserve moisture. Always work the ground as soon after a rain as possible so the ground will not bake. The roots of the Sweet Peas should be kept cool with a mulch of grass clippings or old strawy manure as they will then bloom much longer.

IN A convenient place in the garden and on a stand keep a barrel for a supply of liquid manure. Let the barrel have a spigot at the bottom by which to draw off the manure water. Within a foot of bottom of barrel hang a burlap bag in which put fresh manure from time to time. Fill barrel with water. Tack the open end of bag around the top edge of barrel. Have a top to put on barrel to guard against flies. Have an old bucket under spigot to catch the manure water. Feeding the plants every two weeks pushes them to maturity.

Planting for Use and Delight

DAHLIA roots should be set out in the border the first of May, using fertilizers suitable for potato culture. Set out in the open ground by the middle of the month: midsummer cabbage, tomatoes, pepper and eggplants. The three last could be set out earlier if protected at night in case of frost; but they are not safe from frost until after the 2nd of May in the Middle South. They may be put in the open ground as early as the end of April if protected at night with inverted flower pots, or individual coldframes or an old bag arranged tent fashion over them. Sow in cold frames: celery, fall cabbage, cauliflower and brussels sprouts and French endive or whitloof chicory and late tomatoes the first of the month. Sowing of lettuce, beets, snap beans, and peas should be kept at intervals of two weeks. The first planting of corn and of lima beans to take place at apple blossom time; and successions every two weeks thereafter until end of July.

Harvesting

ASPARAGUS ready to cut the first of April can be harvested for two months. After that it is better to let the stalks grow and the bed be well fertilized and kept free of weeds. Cut stalks early in the morning and keep the butt ends standing in a pan of water until ready to use, then they will not get tough. Canning should be done the same day it is gathered.

Pruning Fruits and Ornamentals

ALL the early flowering shrubs that have bloomed should be pruned at once, so as not to disturb the new growth later. Trim off the long tendrils of the grape vines when they shade the fruit too much. Pull off all small and imperfect bunches of grapes. Cover with paper bags those retained and protect from insects.

J. M. PATTERSON.



From an original painting in oils showing a spot of great natural beauty on the new country estate property of Mr. Iréné du Pont, near Wilmington, Delaware



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THE first thought of Mr. du Pont was the preservation and well-being of his fine old trees. In designing great estates or modest country places, there are generally certain trees around which the whole plan is developed.

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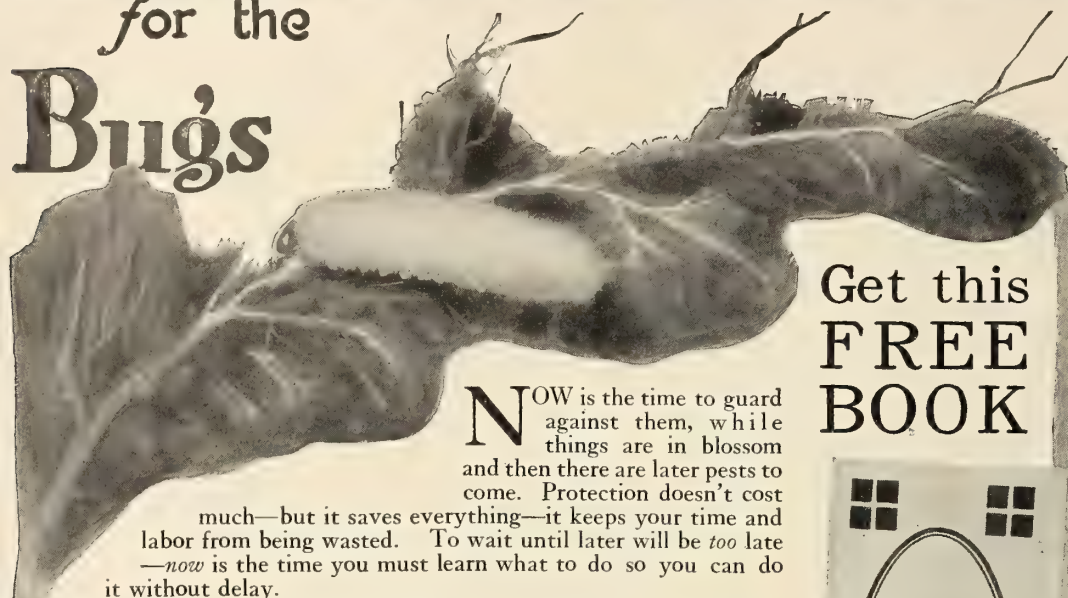
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Every real Davey Tree Surgeon is in the employ of the Davey Tree Expert Company, and the public is cautioned against those falsely representing themselves.

Don't Grow Your Garden for the Bugs



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NOW is the time to guard against them, while things are in blossom and then there are later pests to come. Protection doesn't cost

much—but it saves everything—it keeps your time and labor from being wasted. To wait until later will be *too* late—*now* is the time you must learn what to do so you can do it without delay.

Garden Pests—a book that tells you when and how to protect your garden, your fruit trees, berries, trees and shrubbery against all kinds of destroying pests. This book is free.

Send for it to-day. It tells you what insecticides to use for each kind of pest. How, for instance, to coax the cut worms out of ground and destroy them with bait—how to destroy weevil in corn—how to destroy leaf-eating, root-eating and fruit-eating insects. It tells you the different insecticides to use and how to mix them so that you can destroy more than one kind of pest with one application.

Corona insecticides come in small packages, ready for application, either by wet spray or by dusting, using the powerful hand power Corona dusting gun.

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**Arsenate of Lead
Dusting Sulphur
Tobacco Dust
Bordeaux Mixture**

War conditions have made all kinds of insecticides and old fashioned pest poisons scarce—often quality is doubtful.

To be sure of protection against pests send us the name of your seed or hardware dealer and let us send you this free book. Write to-day.



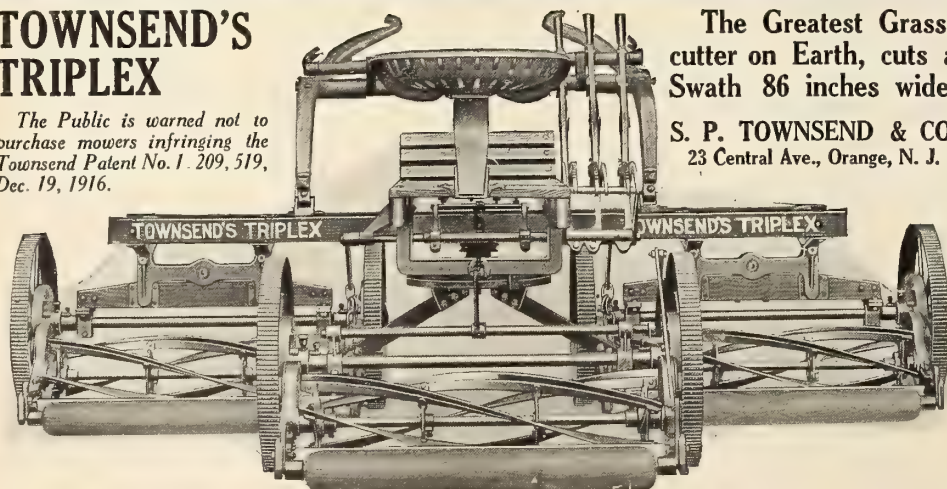
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Drawn by one horse and operated by one man, the TRIPLEX MOWER will mow more lawn in a day than the best motor mower ever made, cut it better and at a fraction of the cost.

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Floats over the uneven ground as a ship rides the waves. One mower may be climbing a knoll, the second skimming a level and the third paring a hollow. Does not smash the grass to earth and plaster it in the mud in springtime nor crush out its life between hot rollers and hard hot ground in summer as does the motor mower.

Send for Catalogue illustrating all types of TOWNSEND MOWERS

Dividing Perennials in the Spring

MANY of the perennials must be divided annually if they are to give the best results as otherwise the clump or mass becomes too dense and full of old useless growth, with dead stalks in the centre. These in time become hollow.

The Hardy Asters, for example, are most satisfactory when taken up and separated every season, and the best time to do this work is early in the spring. They come apart very easily and should be replanted in rich soil. The popularity of the Hardy Asters has grown rapidly of late, and it is easy to make a fine display in a few years from a very small beginning.

Another late blooming perennial which needs the same treatment is the Helenium, the great flower heads of which soon begin to diminish in size if frequent separation of the roots is neglected. It is important to have newly enriched ground for them, as they are heavy feeders, and they prefer a sunny position. Boltonias are in the same class and should never be left longer than two years without a division of the roots, an annual separation being better.

An annual division of the Achillea is also advisable, not so much because the old plants die out as because great numbers of new plants spring up from white, thread-like runners and quickly come to occupy more space than is allotted to them. This also applies to the Bocconia or Plume Poppy, which becomes a nuisance unless most of the new plants are dug out in the spring, to be set elsewhere or thrown away.

The now popular Shasta Daisy needs division every two years, as it makes exceedingly rapid growth. Young plants of this variety of Chrysanthemum should not be allowed to bloom very freely the first year. Once in three years is often enough to divide Pyrethrum Uliginosum, which is another form of Chrysanthemum.

Most of the other perennials do well if divided once in three years, but some should be allowed to go much longer. There is no reason for dividing the Dictamnus or Gas Plant at all, as it will live longer than the average gardener if left alone. The Bleeding Heart improves for many years without division. Many people think that this is true of the Lily-of-the-Valley, which is a mistake. This favorite flower should be divided every three or four years if it is to be kept free flowering.

The Larkspurs go well for four years without being disturbed and then the work of separation must be done carefully, for each division must be left with a good crown and plenty of root fibers. The work is best done with a sharp knife after the earth has been washed from the roots, and when replanted the crown should be two inches under ground.

Very early flowering perennials like the Doronicum, or Leopard's Bane, are best divided after they have flowered, in order that blooming may not be interfered with. Plants that have heavy root stalks, difficult to separate, should not be divided too severely, or flowering will be seriously interfered with. This applies especially to Larkspur. When the roots are easily pulled apart, making many distinct plants, the division may be made more freely.

Generally speaking "dividing" perennials is absolutely simple: just chop through the mass with a spade.

Massachusetts.

E. I. FARRINGTON.



Give the Boy a Chance!

He is just "itching" for that healthful, invigorating exercise that his young muscles will get when pushing a "Barker!" Besides, the "Barker" will help and encourage him—make garden work **fun all summer long**. And with it he can do better work—and more of it—than ten men can do with the old-fashioned tools.

THE BARKER

Weeder, Mulcher and Cultivator

destroys the weeds and breaks the surface crust into a moisture-retaining mulch **in one operation**. Intensive cultivation. Wheel blades, revolving against the stationary knife, uproot and chop the weeds and form the necessary soil mulch. "Best Weed Killer Ever Used." Works up close to the plants. Cuts runners. Has leaf guards, also easily attached shovels for deeper cultivation.

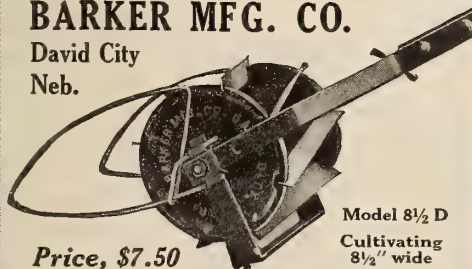
A 10-year-old boy can operate it. He can do better work with it than two men with wheel hoes—and **we can prove it!**

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describing and illustrating the five different sizes. Also contains helpful information for the gardener. Show it to the boys and girls. Help them select the size that best suits your garden. We'll guarantee it to do the work or refund your money. Use the coupon below.

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COMING EVENTS CLUB & SOCIETY NEWS

Meetings and Lectures in May

(Following dates are meetings unless otherwise specified)

- *The Garden Club of Cincinnati, Ohio. Tulip Show, at the Art Museum.
1. Short Hills, N. J., Garden Club.
2. Marshfield, Mass., Garden Club.
3. Pasadena, Cal., Horticultural Society.
4. Lake Geneva, Wis., Gardeners' & Foremen's Association.
- New York Botanical Garden, Bronx Park. Lecture: Drug Plants and Their Cultivation.
6. Larchmont, N. Y., Garden Club.
- New Bedford, Mass., Horticultural Society.
7. Garden Club of Pleasantville, N. Y.
8. Valdosta, Ga., Floral Club.
- Short Hills, N. J., Garden Club.
- Nassau Co., Horticultural Society, Glen Cove, L. I.
10. Lenox, Mass., Horticultural Society.
- Westchester, N. Y., & Fairfield, Connecticut, Horticultural Society.
- Connecticut Horticultural Society, Hartford, Conn.
11. Dobbs Ferry, N. Y., Horticultural Society.
- New York Botanical Garden, Bronx Park. Lecture: How to Grow Fruits in Limited Areas.
- 11-12. New York Botanical Garden, Museum Bldg., Bronx Park. Exhibition of Flowers.
13. New York Florists' Club, Grand Opera House.
- Garden Club of New Rochelle, N. Y.
- Rochester, N. Y., Florists' Association.
- Park Garden Club, Flushing, L. I.
14. Garden Club of Ridgefield, Conn.
15. Rhode Island Horticultural Society, Providence, R. I.
- Short Hills, N. J., Garden Club.
- Tarrytown, N. Y., Horticultural Society.
16. Salisbury, Conn., Garden Club. Subject: Children and Their Gardens.
- Marshfield, Mass., Garden Club.
17. Dahlia Society of California, Palace Hotel, San Francisco.
- Pasadena, Cal., Horticultural Society.
18. New York Botanical Garden, Bronx Park. Lecture: Fiber Plants and their Cultivation.
- Lake Geneva, Wis., Gardeners' & Foreman's Association.
- 18-19. Massachusetts Horticultural Society, Horticultural Hall, Boston. Exhibition.
21. Gardeners' & Florists' Club of Boston, Horticultural Hall, Boston.
22. Short Hills, N. J., Garden Club.
24. Connecticut Horticultural Society, Hartford, Conn.
25. Dobbs Ferry, N. Y., Horticultural Society.
- New York Botanical Garden, Bronx Park. Lecture: Women as Gardeners.
27. Park Garden Club, Flushing, L. I.
28. Garden Club of Ridgefield, Conn.
29. Short Hills, N. J., Garden Club.

*The date of this show depends on the weather conditions.

Fertilizers in the Garden

THE gardener's problem in keeping up soil fertility under high pressure cultivation differs greatly from that of the average farmer. The latter thinks deeply of quantity; whereas the gardener considers earliness, quality, appearance, in addition. The gardener's soil must have the necessary plant foods available at all times. These are supplied by liberal dressings of manure and of a complete chemical fertilizer. Practically all garden soils can be fed liberally where intensive cultivation is given, and for the average gardener it is generally better to use a complete fertilizer than to "dose" with special ingredients for specific purposes. The "limiting factor" in any scheme of feeding is, of course, the particular element that is present in the lowest degree. It may not be the same for all crops in all soils; hence the wisdom of using the complete fertilizer on areas where there is intensive cultivation of a variety of crops. It has been officially shown that fertilizer prices have not advanced in equal proportion to the crops they produce. But remember, fertilizer is only one factor in production; cultivation, water, tillage, etc., are equally necessary—nay, more so—and fertilizers are neither curreals nor substitutes for good husbandry, but valuable adjuncts.

—L. B.



The First Giant Yellow Canna

YELLOW KING HUMBERT

A King Humbert "sport," changed in color and leaf, but with the same

Giant Flower and Spike and "Musa" like foliage.

Yellow King Humbert is a pure, rich golden yellow, softly spotted red; at a distance the effect is a solid golden yellow.

The spikes and blooms are of giant proportions, individual flowers measuring from 5 to 7 inches across, while the large petals measure 3½ inches.

Planted with its parent, the bronze-leaved King Humbert (the leading Canna in use today), no color contrast ever attempted with these tropical flowers can excel the effect produced.

The best Canna Bed in the S. A. F. Convention Garden, Bronx Park, N. Y.

Canna Beds make a brave show for these war days. Our "War Time" Catalogue offers all the best ones. ASK FOR IT.

Price for Growing Plants	
Per 100	\$20.00
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Each	.25

All Prepaid, with Catalogue
Plants sent prepaid May 10th, unless otherwise ordered.

OUR CANNA NOVELTIES of past years are leaders to-day. For a quarter of a century we have specialized in GLADIOLI, the best summer flowering bulbs, introducing such world-wide winners as **Princeps**, **Mrs. Francis King**, **Chicago White**, **Primulinus "Sunbeam"**, etc. Many better and more beautiful, recently listed, are still in their infancy of fame.

Our Catalogue "Gardening Illustrated" tells all about these Bulbs and Plants and includes complete lists of the **Best Flower and Vegetable Seeds in America**—152 pages with colored cover and inserts, mailed FREE everywhere. A postal brings it.

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can't harm the "tender" crops in your garden one iota if you protect the rows with GroQuik Forcers. They bridge the gap between seasons and stand as complete insurance against frosty surprises.

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There are three sizes of tent-shaped forcers, as shown below, for crops of different heights. The "barn" shape is for plants with spreading tops. The latest improved forcer is a regular miniature greenhouse. All are reasonable in price.

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New Early Hybrid
Furnishes the sweetest and most luscious creamy nutriment you can imagine. Claimed the most important horticultural acquisition of recent years. Awarded the only medal given for sweet corn by the Mass. Horticultural Society in nearly 100 years.

DeLue's Golden Giant is the result of 12 years' selection from the product of Howling Mob crossed with Golden Bantam and combines all the good points of both parents—and then some.

Stalks very short and stout near the ground. Two to three ears; 8 to 9 inches long; cob of small diameter, carrying from 12 to 18 rows of long, broad kernels of deep orange color. Remains tender until nearly ready for seed.

It excels all other early varieties in size, productiveness and quality, and all the late varieties in quality and early maturity, while equaling them in size.

It is the one corn for the home or market gardener who wants the greatest amount of highest quality corn in the shortest period of time from the smallest piece of land. Illustrated booklet, "How to Know and How to Grow a Perfect Sweet Corn," sent with order. Price 35c per ½ oz.; 50c per oz. (about 120 to 130 seeds).

Beware of substitutes. The genuine seeds are for sale only by the originator:

FREDERICK S. DeLUE, M.D.
Experimental Farm Needham, Mass., Dept. 1 B



Dreer's Roses for the Garden

The bulk of our Roses are field grown in 1917, then carefully dug, planted in pots and stored in cold frames. Under this plan the stock is strong and ready to start blooming, and much superior to stock forced by high temperature.

The Dreer Dozen Hardy Everblooming Hybrid Tea Roses will furnish a constant supply of blooms throughout the summer and autumn—include the best of every color.

- Caroline Testout:** One of the most popular bedders. Bright satiny-rose, very free and fragrant.
- Duchess of Wellington:** Intense saffron-yellow stained with deep crimson, changing to a deep coppery saffron-yellow. Fragrant and very free-flowering.
- Ecarlate:** Produces a greater number of flowers than any other Hybrid-Tea Rose in our collection; the flowers while not large are of an intense brilliant scarlet color and of perfect form.
- Lady Ashtown:** Flowers are large, double with high-pointed centre, produced on long stems.
- Lady Ursula:** The flowers produced on every shoot are very large, and a delightful tone of flesh-pink, delicately tea-scented.

- Laurent Carle:** Large, deliciously-scented, brilliant carmine flowers throughout the season, nearly as good in hot, dry weather as under more favorable conditions.
- Mme. Leon Pain:** Silvery-salmon, with deeper orange-yellow, shaded centre, the reverse of the petals being a salmony-pink; flowers large, full and well-formed; very free-flowering.
- Mme. Jules Bouche:** While not a pure white, it being at times slightly tinted with blush on the reverse of the petals, we consider it one of the best white bedding Roses: very free-flowering.
- Mrs. Aaron Ward:** A remarkably floriferous variety of strong, vigorous, but compact growth; a rich bronzy-green color, the flowers, which are of splendid form, full double, are equally attractive

when full blown as in the bud state; in color a distinct Indian-yellow, shading lighter towards the edges.
Mrs. Wakefield Christie-Miller: As a pink bedding Rose there is none better, and particularly so for massing, the flowers are distinct and novel in shape, the

petals having wavy or crisped edges not unlike a Paeony. The flowers, which are of large size, remain perfect on the bushes for a long time and are produced very freely; bright pink color with lighter shadings.
Ophelia: Has made such a record for it-

self that qualifies it to be classed with the very best, a Rose that is admired by everyone, its flowers are held erect on long stiff stems, are of perfect form, large size; and of a delicate tint of salmon-flesh, shaded with rose, very floriferous.

Prince de Bulgarie: Large full double flowers of which are produced abundantly throughout the season, a good reliable bedder of a silvery flesh color, deepening to the centre with delicate salmon-rose shadings, a soft pleasing color.

DREER'S GARDEN BOOK besides describing and illustrating Roses for every purpose is the best guide for your War Garden. Its articles for both planting and caring for vegetables were written by experts. The varieties listed are dependable in quality and germination. It is quite as much a Garden Book as a catalogue.

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| Corn—Golden Bantam | Spinach—New Zealand |
| Cucumber—White Spine | Swiss Chard—Giant Luculus |
| Lettuce—Black Seeded Simpson | Tomato—Selected Stone |
| Lettuce—May King | Turnip—White Globe |

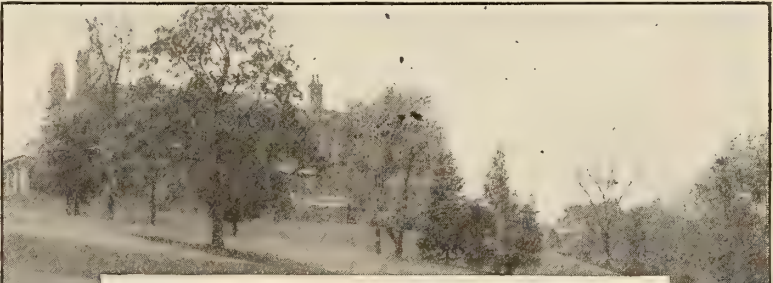
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Our 1918 Spring Catalogue sent on request

Stump & Walter Co

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IN THE problem of furnishing and beautifying a home, the outside is more important than the inside. One hundred see the outside where one sees the inside; yet more time and attention is usually given to the interior furnishings, notwithstanding the outside effects are attained at little cost and offer a wider opportunity for individuality. The lawn's appearance is the first impression we receive: it is the last impression we carry away. What is more important than this feature? But remember, a good lawn cannot be attained without adequate fertilization.

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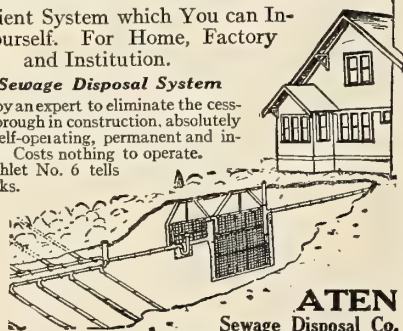
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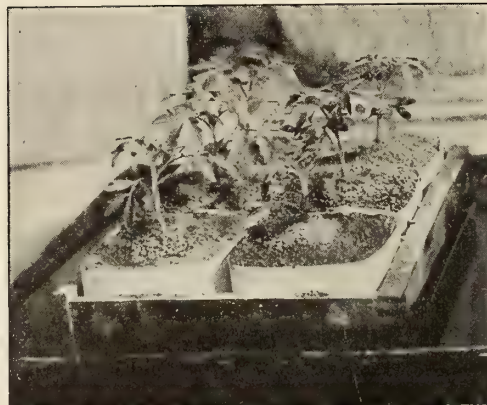
Sole Agent for U. S.

Drainage and Moisture in Flats

IN THE matter of drainage, *crocks* in the bottom of flats are not nearly so important as *cracks*.

Crocks, it seems to me, are not worth the space they occupy, for that space might much better be filled with moisture-holding material. One of the important factors of success with either seed or seedlings is to keep the earth in the flat moist, and, of course, the more earth there is in the flat the longer it will stay moist. Thus, other things being equal, a flat six inches deep will stay moist longer than one three inches deep if the surface area of the two are the same. Therefore, if instead of crocks, which hold no moisture, the flat is filled wholly with earth, or, better still, if half or three quarters of an inch of good manure is used in the place of crocks, it will undoubtedly stay moist longer.

Of course, it will not do to have this little seed bed water-logged, but the danger of



Sub-watering arrangement for flats by which overhead showers are obviated

water-logging in a three inch flat that has several eighth inch cracks running the length of its bottom and leaks on all four sides where the boards are joined together, is negligible.

Furthermore, it is not necessary to have the earth moist either at seed planting time or transplanting time. If the earth is dry it will sift more easily and will pack around the seeds or roots more closely. After the layer of manure is placed in the bottom of the flat, fill it with dry, sifted earth. Press this down as much as possible around the edges and especially at the corners; then press it down firmly in the middle. When this operation is complete the earth should be smooth and level, and within a quarter of an inch of the top of the flat. Place the seed, broadcast, or in rows, where they are expected to germinate, press them down slightly and cover with sand until the flat is level full.

This sand should be clean, for then the plants can push up through it readily without breaking themselves and without exposing the fine roots of the seedlings, more or less to their detriment.

When the flat is planted and filled to the top with sand, set it in a pan of water and leave it there until it soaks up enough to make the sand surface wet. Then take it out and lean it against something to drain. By the time it can be lifted without dripping there will be no danger of water-logging. The flat will still be level full, but after two or three such waterings the earth will have settled. If a glass is kept over it, watering once a week will be sufficient in ordinary temperatures.

Ind.

W. L. W.



The ideal hammock for summer home, camp and bungalow is the Rowe Gloucester Bed Hammock. An essential article of summer furniture that is always in demand and that lends beauty and inviting comfort to porch or piazza. A Rowe has distinctive lines of individuality and all-quality construction that appeals and pleases.

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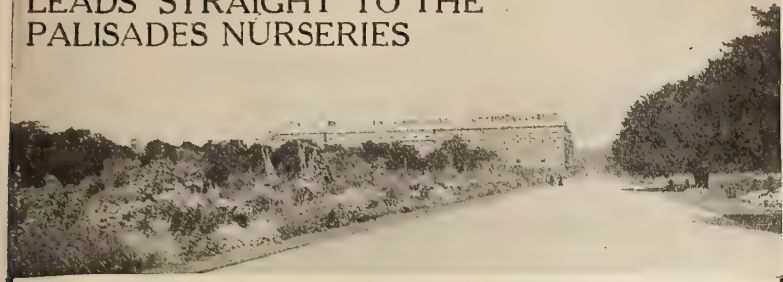
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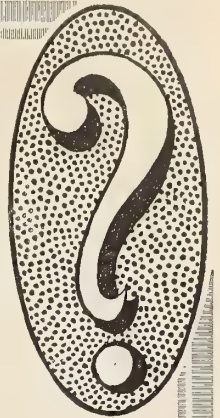


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are now in the busiest year of their history. Thousands who gardened the old way last year began to observe how the experienced home gardener and the *market gardener* cut out the heavy labor by using these wonderful little tools. Thousands who never gardened before have got the proper start with "Iron Age" Seeders, and are now well on the way to big results with "Iron Age"

Wheel Hoes. Other thousands have prepared to ward off destructive armies of bugs and plant diseases with "Iron Age" Sprayers. Their crops are assured.

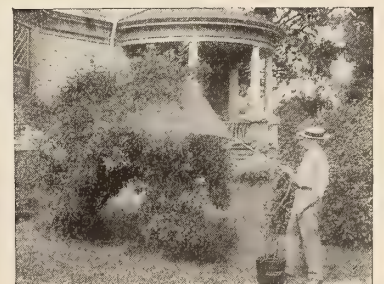
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Cottage Tulips "Breaking"

IN PAST seasons I have written THE GARDEN MAGAZINE items about my tulip beds, particularly as to the breaking of supposed fixed sorts by ones and twos at a time out of the fifties and hundreds I bought from Holland. For two years I have inclined to the doctrine that these supposedly broken and fixed sorts in my garden gave variations from injured bulbs scarred in summer digging. I always plant scarred bulbs in the fall if they have not dried to powder during the summer from the effects of the injury.

In the summer of 1915, rain of seven weeks' duration came on here in June, just after I had got one of six long Tulip borders cleared of ripened bulbs. No weather suitable for digging came until the five remaining beds of bulbs had again sent out roots. They had to be let alone as they stood. Those five beds had a mixture of choice sorts, later and earlier, precisely like the stock of the one bed which was harvested. They were the bulbs from which I had had such interesting variables in Clara Butt, Sultan, Caledonia, and the like reliable sorts as I wrote in two issues of the magazine. The variables remained, of course, with the other bulbs in the beds.

This spring the five untouched beds and the one harvested and replanted bloomed side by side under identical weather and soil conditions. The untouched beds were a week earlier in flower, but weakish and poorer in all but two sorts. Many bulbs sent up one great leaf only, resting from flower. Few of the handsome variations bloomed at all here—not as many in all as in the one replanted bed. No new variations appeared. In the harvested and replanted bed nearly every bulb bloomed; variations previously seen were represented; several fine new variations occurred.

I am inclined to think that this shows variations a little weaker than the unaltered parent sort, less inclined to flower if the soil is hard or poorly aerated or limed, and favored—if affected at all?—by digging and long ripening in the summer. Nothing is proved as to new variables coming from slightly scarred bulbs; but beds which had no new scar-patients because not redug in June, 1915, had absolutely no new "breaks" at all in some 50 square yards, as against a fair number for the replanted 9 or 10 square yards. A sort of drift of probability in favor of the scar theory. I had noticed for three years that a fellow gardener who always threw away her hurt bulbs every June developed no "freak sorts" in her beds from the standard sorts we both grew.

The hard and rather weedy beds undisturbed last season brought perfect flowers of Kate Greenaway for the first time, though I had owned the variety for four years. This is a late Tulip, very late, according to catalogues. It bloomed there this year with Painted Lady (Shandon Bells), and about that size and height, though of weaker pale green stem—not very late, that is to say. Every flower was perfect, pale as an apple blossom, tinted in tiny dots and lines of lavender and pink, with a meek gray centre and delicate edging lines of green. It was better off for being undisturbed, certainly. So was the round golden Tulip, Yellow Gesneriana, which shines out a grand chrome with black-soot anthers; this makes, most years at ordinary harvest time, a small flaccid bulb, and flowers weakly and late in my land. Its flowers from the neglected beds were the finest

(Continued on page 208)

Lawn Beauty with Economy and Conservation of Labor

THE lawn beautiful must be cut often and well—and to-day hand mowing is not equal to this task where the lawn area is greater than two acres, unless labor out of all reasonable proportion is employed.

THERE is, however, one solution, one lawn-cutting mower that solves the labor problem and at the same time, assures a perfect lawn at the minimum of expense. That mower is the

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It is indispensable for trimming around the edges of Flower Beds or along the sides of Hedges. Simply remove and reverse the blade and you have a tool that will trim and cultivate at the same time.

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A Bit of Personal News

—From Adolph Kruhm—

In April, 1917, when the first great army of home gardeners rallied around the President, I, too, started a war-garden. From the very outset I made records with my camera, and notes about the progress of the various crops were constantly jotted down. The story of the season's work, supplemented and modified by fifteen years of previous gardening experience, is now presented in my latest book,—

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Henry Field, the prominent seedsman of Iowa, sums up the general opinion of the seed trade when he says:—"I read your book through from cover to cover before I laid it down. You know what that means at a time when from two to three thousand letters are on my desk awaiting an answer."

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graphs, 32 in their natural colors, seem to have made the biggest "hit."

Another very important factor is the simplicity of the language used; even a child can readily understand it. The book tells just how, when and where to plant every American vegetable of any consequence. It serves the beginner as well as the veteran gardener.

So confident am I that my book will fill the needs of every reader of Garden Magazine that I will agree to answer by means of a personal letter any questions that the book does not.

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as of a man, is determined by the qualities within. For those who look upon garden making as a labor of love will appreciate our catalogue of Bird Fonts, Sun Dials, Flower Pots and Boxes, Vases, Benches, and other pieces that recall the charm of the Old World Gardens.

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Hyacinths,
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dant of flowers in the
house from December until
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By ordering from us now instead of waiting until Fall, you make a large saving, get a superior quality of Bulbs not usually to be obtained at any price in this country, and have a much larger list of varieties to select from.

Our orders are selected and packed in Holland, and are shipped to our customers immediately upon their arrival, in the best possible condition. DARWIN TULIPS—We can now supply the magnificent and high-priced Darwin Tulips at a great reduction. They are sensational in their beauty and should be included in every garden. They last for many years.

If you wish to take advantage of our very low prices, we must have your order not later than June 1st, as we import Bulbs to order only. They need not be paid for until after delivery, nor taken if not satisfactory. (References required from new customers.)

A FEW PRICES	Per 100	Per 500
Fine Mixed Hyacinths	\$4.50	\$21.00
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Narcissus Golden Spur	3.50	16.00
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For prices on smaller quantities see our import price list, the most comprehensive catalog of Bulbs published, which may be had for the asking.

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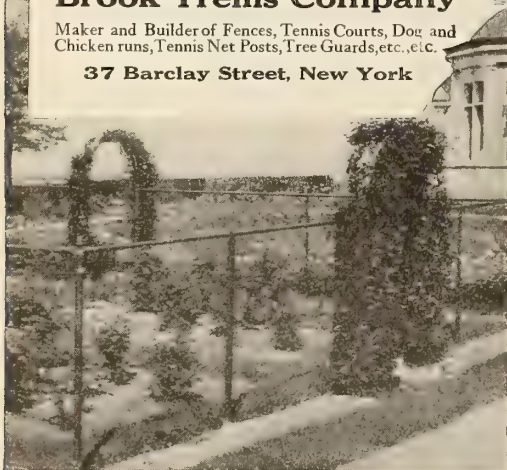
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37 Barclay Street, New York



(Concluded from page 206)

I ever saw of its kind. Probably this and Kate Greenaway are slower than the rest to ripen a bulb properly. Or—you pay your money and take your choice about believing Tulip-doctrines, it seems to me—it may mean that these two want moisture all summer to keep the bulbs, not utter ripe-curing in a dry room so profitable to most of the others. Has any one tried burying them in sand for summer storage?

Pennsylvania.

E. S. JOHNSON.

—Breaking in Tulips is still as much a matter of mystery as it ever has been, and the question is now causing considerable discussion in England, where broken stocks are bothering the growers a great deal. Whole stocks of Clara Butt break there, while in Holland a break is more or less of a rarity. My belief is that injury, such as is noted above, can never be a cause of breaking. Probably soil, or climatic conditions, or both, are the real causes; it is certainly due to degeneration of some kind. We know that a broken bulb throws the next season a stalk much shorter than the unbroken type, and produces a much smaller bulb. This is true of the Bybloem and Bizarre of classes [the broken Breeders], and also the Rembrandts [broken Darwins].

Broken forms always appear with me during the second season for the bulbs in my garden; the first year from Holland I have only two or three out of the 20,000 bulbs I plant. It is after the bulbs are weakened by a year's growth in soil and climate unkindler than Holland affords that they break; and though injury to the bulb does weaken it, I feel sure that breaks would occur only the year after they have grown in American soil. Does your correspondent have any evidence to offer from bulbs scarred when received from Holland?

CHESTER J. HUNT.

Things to Remember in Planting Evergreens

WHEN only a few trees are to be planted, the holes must be dug by hand labor, but the ground should be spaded up beforehand to a depth of 2 feet or more if the subsoil is hard and impervious. If the soil is dry it should be soaked up by artificial watering a few days before the trees are to be set, so that it can be worked without danger of puddling at the time of planting the trees.

The holes should not be dug until the tree is ready to be planted. Opening a hole some time before the tree is to be planted allows the soil to dry out. Two or three inches of loose soil should be left in the bottom of the hole, place the tree in an upright position, arrange the roots in natural order and fill in about them with loose, moist soil. When the hole is partly filled, tramp the soil firmly to bring it in close contact with the roots and leave no openings about the roots. Two or three inches of the top soil should be left in a loose, open condition for a soil mulch. If the soil is in good condition, the newly planted trees will not require watering. When planted in their permanent location the trees should be set 2 or 3 inches deeper than they grew in the nursery.

Newly planted trees should receive the best of cultivation for one or two years, or until they become thoroughly rooted. The cultivation should be sufficient to maintain a soil mulch and to keep down all weeds.—*W. J. Morrill, State Forester, Colorado Agricultural College, Fort Collins, Colorado.*

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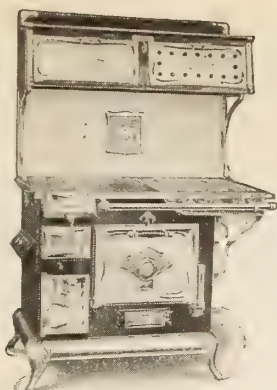
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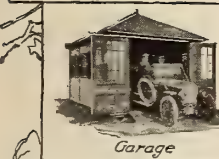
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LAST year I planted different varieties of vegetables in my garden side by side in an effort to determine just which sorts were best adapted to the soil and conditions in my garden. In many instances it was impossible to tell just the ones I liked best, so nearly did they resemble each other. With others however, it was no trouble at all to make a choice.

I tried Detroit Dark Red beet with Crosby's Egyptian and Crimson Globe, and found it better than either of the others. The main points of excellence I found in Detroit Dark Red are, smooth, uniform roots, small tops, freedom from woodiness, and its excellent flavor. For canning purposes it is unexcelled.

Golden Bantam is the best early sweet corn that I had in my garden. It is not so productive as some of the later varieties, but what it lacks in size is more than made up in the quality of the pretty golden ears. Perhaps my trial was not a fair test as this variety produced ears before any of the others planted, and I think I was prejudiced in its favor from the time that I saw the first rich yellow grains.

I always sow several varieties of beans, and the reason I selected Kentucky Wonder as a favorite was because of its productiveness combined with its table qualities. As a producer it had anything in my garden outclassed. From the beginning to the end of the season the vines were fairly loaded with the long, stringless, meaty pods, this in spite of my efforts to keep them picked off, too. I made several plantings and they did equally as well when grown as a late crop as when sown for the first main crop.

In my mind the best radish for the home garden is the little Olive-shaped French Breakfast. It is hardly so early as some of the round sorts, but in quality it is superior. The attractive pink and white roots look better than nearly any other kind.

I had American Prizetaker and Giant Gibraltar onions growing upon the same bed, and after carefully considering the relative merits of the two, I decided in favor of the latter. They are nearly alike so far as the quality of flesh is concerned, the main difference being in the size of the bulbs. The Gibraltar grows longer here in the South and reaches a greater size before maturing. It seems, too, that it is a little better able to withstand drouth.

Acme, Ponderosa, and Stone composed the trio of tomatoes grown. Of these I decided that Stone, on account of its flavor and ability to withstand either dry or wet weather, was the best. I found the Stone to be a heavy yielder, the fruits being large, of a scarlet color, and it is the juiciest tomato of them all. When the vines run over the ground the fruits do not rot and drop off. Osceola, Ark. BUFORD REID.



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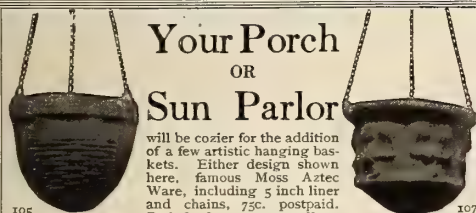
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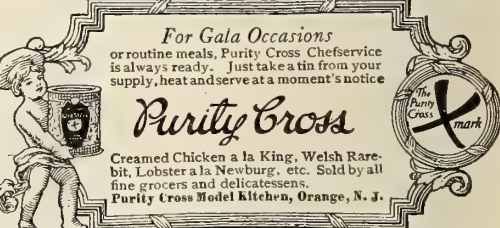
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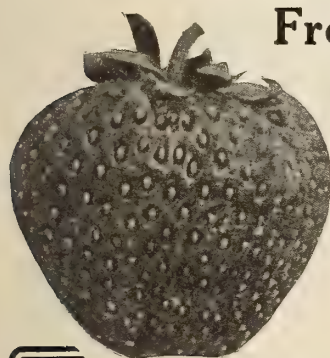
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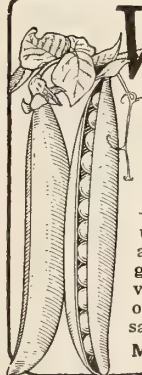
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Vegetable Lore

What to Plant—How to Plant

A MAGAZINE for the benefit of the amateur gardener. Its aim is to teach planting, growing and cooking of vegetables. An all-year companion of the home gardener. No advertisements—no high-sounding terms. Just truthful, understandable advice for the happy men and women to whom the garden is a playground and a patriotic necessity. Full value to subscribers in excess of claims or money refunded. Issued monthly—sample free—\$1.00 per year.

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Don't wait until another
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Substantially constructed from 1½ inch Diamond mesh heavy galvanized wire fabric and galvanized round iron frames with one inch galvanized Hexagon Netting along the bottom, twelve inches high. Strong and durable and its portable feature makes it readily adaptable for fencing in young chicks or ducklings as well as grown chickens, ducks, geese, etc. Also used to advantage for enclosing small vegetable garden plots, dog runways, etc.

Made in Standard size sections as follows:

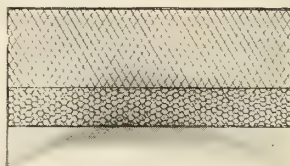
7' long x 5' high		\$3.75 per section
2' 6" x 5' (gate)		1.00 "
8' " x 2' "		2.00 "
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PLUS 10% TO THE ABOVE PRICES, F. O. B. BUFFALO

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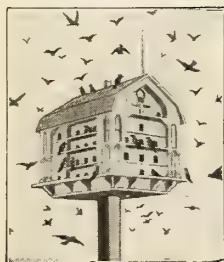
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My Bird Book describes just the right kind of a

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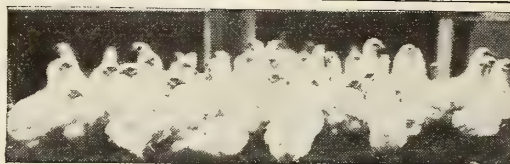
for every kind of bird. No grounds are quite complete without the song birds. You can attract the very bird you want to your home grounds by simply putting up the right kind of Dodson House.

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White Leghorns S. C. Rhode Island Reds
Also a limited number of White Plymouth Rocks

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Thomas MEEHAN & Sons

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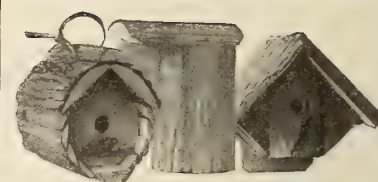
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fifteen inches square, three inches thick, hollowed out round two and one half inches deep in centre sloping

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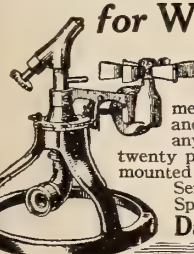
Dayton Rotary and Oscillating Sprinklers

will cover a circle, 80 feet in diameter, or a half circle, of 3 to 40 ft. radius, with as fine a spray as a summer rain. Dayton Sprinklers are the ideal device

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Of simplest make and best metal construction, trouble proof and long lasting. Adjustable to any kind of stream, operated with twenty pound pressure. Type shown is mounted on stand for hose connection. Send for descriptive price list and Special Offer TO-DAY.

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HODGSON Bird Houses

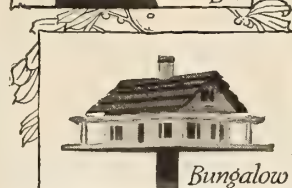
The birds are nesting. You hear them everywhere. How sweetly they sing as they fly about, filling the air with their joyous twitterings.

Why not buy them an attractive home and keep them near your door! A Hodgson bird house is artistic, strong and durable—just the thing to add to the picturesque beauty of your surroundings. The birds themselves will more than pay for the cost of the home you buy for them, for they are great enemies of insects and bug life.

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Suet Box	95c each—\$9.00 per dozen
Bungalow	24" x 28"—6 rooms—\$12.00
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25 Everbearing Raspberry Plants.....	\$1.00
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Dahlias (Reds and Yellows), each tuber.....	6c
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We have 250 planting varieties in our nursery. Write, giving want lists.

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"PROGRESSIVE" best Fall-Bearer; also standard June sorts including our new seedling, "COLLINS." Raspberry, Blackberry, and Grape Plants in Assortment. Catalogue Free.

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THE VAN DUSEN NURSERIES
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Gladiolus

3 dozen mammoth flowering gladiolus in 12 of the world's finest named varieties . . \$1.00

Asters

100 growing aster plants ready to set in the open ground, 10 named varieties, the best in all the world to-day for cut flowers. The very cream of the aster kingdom. . . \$1.00

If you would like to grow flowers for profit, ask for our money-making show garden proposition.

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DAHLIAS OF DISTINCTION

My own creations, and standard varieties of all the different types, classes, and colors of this flower. The most interesting dahlia catalogue published. 56 pages tells "How to Grow Dahlias."

SPECIAL OFFERS

For the benefit of those who wish a selection of dahlias made for them, Collection No. 1.—fifteen named varieties several types, no two alike, my selection—each variety labeled—\$1.25 postpaid to any part of U. S. Collection No. 2.—Similar to collection No. 1—but more expensive varieties—\$2.25.

Catalogue on request.

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DAHLIAS You Will Need Some

Dahlias to help make your flower garden a success. They are easy to grow, and sure to bloom, and will please you with their beautiful forms, and Handsome colors. Write to-day for my dahlia catalogue, describing over 350 varieties, with very reasonable prices, or send one dollar for my *Hard to Beat* dollar dahlia collection, of 20 choice Cactus, Decorative, Fancy, and Show Dahlias, labeled, true to name. Sent postpaid anywhere.

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Let's Help You Win The War

The never ending cry from Europe—from our Allies and our own soldiers—for FOOD, FOOD, and MORE FOOD has aroused the people of this country to their greatest duty—that of feeding the world. The GARDEN MAGAZINE has therefore been drafted to the service of telling war-gardeners why, how, when and where to plant and cultivate and harvest to the best advantage. What we have done and what we propose to do are told below:

What We Have Done

1. May, 1917. Home Vegetable Gardens a Patriotic Duty. Complete plans for a 50' square garden.
2. June, 1917. Transplanting Vegetables to Economize on Space. The Why and the How.
3. July, 1917. Mobilizing the Crops for Winter. The Why, What and How to Can Vegetables and Fruits.
4. August, 1917. Saving Labor in Land Cultivation. Machines of all kinds to aid the gardener.
5. October, 1917. Keep It When You've Got It. All about storing your vegetables for winter.
6. January, 1918. Making the Smallest Quantity Reach the Farthest. Plans for an economical garden.
7. March, 1918. A War Time Garden For the Year. How three people can live a year from one garden.
8. April, 1918. Flowers For the War Time Garden. Let us not forget the "rays of sunshine" this year.

What We Will Do

In the January, 1918, issue we started a series of "moving picture films" that will continue throughout the year. Each month the particular garden operations that need to be done are told in a page of pictures—actual photographs of real gardeners doing 'em.

With these pictures goes a whole page or more of text matter, describing the how and the why and the wherefore of the whole thing, and this is called "Putting It Simply For the Beginner."

Effie M. Robinson, and Professor E. L. Kirkpatrick have written some extraordinary articles on Canning and Drying Vegetables. They will appear in the June issue—in time for use this summer.

In June an article, "High Pressure Vegetable Gardening" expounds the principles of growing much in little space.

In July "Increasing the Efficiency of the Garden" appears. This article will simplify your cultivating work.

Every month there are descriptions of the best new flowers, how to grow them and how they were developed.

To sum up the situation in a nutshell, we are working with might and main for better gardens, and more gardeners. Our every energy is being expended to further the work of our government and the experts they have called to their assistance in this world-crisis. Here are two ways we can help you: The past issues listed on the left above contain matter of interest to every gardener. You can have these issues for 25c. each, or all eight for \$1.00. Better still, let us mail you the next seven months of the Garden Magazine for \$1.00. Then you will be sure to get all the latest information obtainable of gardening methods. See the two coupons below—use one or both—you will not regret it.

The Garden Magazine

(The Readers' Service Department stands ready and willing at any time to give you advice or information on any subject connected with gardening. Just address "The Garden Magazine Readers' Service, Garden City, New York," and your questions will be answered by return mail. This service is free to readers of the magazine).

You Must Produce Food!

DOUBLEDAY, PAGE & COMPANY, Garden City, N. Y.

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Send me the back numbers of the Garden Magazine crossed off: 1, 2, 3, 4, 5, 6, 7, 8, I enclose herewith \$..... in payment therefor. (Each copy, 25 cents, or all eight for \$1.00).

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You may enter my subscription to the Garden Magazine for the next seven months. Here is \$1.00, according to the terms of your offer.

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✚ Stretching forth her hands to all in need—to Jew or Gentile, black or white, knowing no favorite, yet favoring all.

Seeing all things with a mother's sixth sense that's blind to jealousy and meanness; helping the little home that's crushed beneath an iron hand by showing mercy in a healthy, human way; rebuilding it, in fact, with stone on stone and bringing warmth to hearts and hearths too long neglected.

Reaching out her hands across the sea to No Man's Land; to heal and comfort thousands who must fight and bleed in crawling holes and water-soaked entrenchments where cold and wet bite deeper, so they write, than Boche steel or lead.

She's warming thousands, feeding thousands, healing thousands from her store; the Greatest Mother in the World—the RED CROSS.

Every Dollar of a Red Cross War Fund goes to War Relief

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Save Food for His sake

THEY are prepared to make the supreme sacrifice of their lives for the preservation of Democracy. They look to you, men and women of America, to help them in their valiant battle against the enemy.

Save Food

The more we in America cut down on food consumption — *Particularly Wheat* — the better is our army — and the nearer is peace.

Saving Food Is Saving Lives. You Must Help.

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GARDEN

MAGAZINE

JUNE, 1918

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assure lawns of richness and gardens productive of vegetables and flowers. You can have rain *when* you want it, *where* you want it, and *how* you want it.

Economy, simplicity and efficiency come with Cornell Overhead and Underground Irrigation Systems, with patented, adjustable Rain Cloud Nozzles. Installed any time—for any area. No injury to lawn or garden.

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72 Pages of Garden Beauty



THIS artistic handbook illustrates and describes one hundred and sixty weather-resisting pieces for the garden, which we ship by express to all parts of the nation (express allowed east of Mississippi River.)

"Old World charm and modern beauty are fascinatingly intermingled in this book."

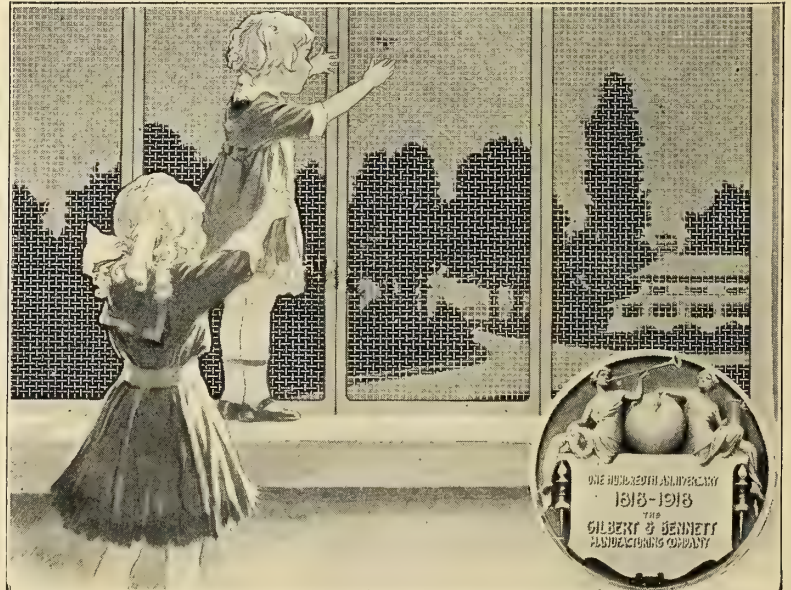
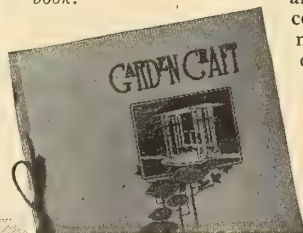
pergolas, summer-houses, trellises, trellis fences, wood-work, arbors, seats and sunset arbors, are famous the world over for artistic excellence. The handbook, with 1918 supplement, will be mailed you on receipt of 50 cents, stamps or coin (to be deducted from first order) to cover printing cost and postage.

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LAKEWOOD CLEVELAND, OHIO

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Mathews GARDEN CRAFT



Before "Fly Time" Comes "PEARL Time"

BEFORE insect pests begin to breed and carry in your home disease-bearing germs and discomforts along with them—screen your windows and your doors—close in your porches—put that wonderful screen material—**G & B Pearl**—between your family and Summer dangers.

Back of the enormous and ever increasing sales of **G & B Pearl** is its unusual wear quality. It is as durable and rust-proof as metal can be made and does away with the necessity of painting and repairing and continually replacing screens. No painted or galvanized cloth can be compared with it. The metallic coating which protects it from the ravages of rust is a secret process owned and controlled exclusively by Gilbert & Bennett. So avoid imitations and "just as good." They are inferior.

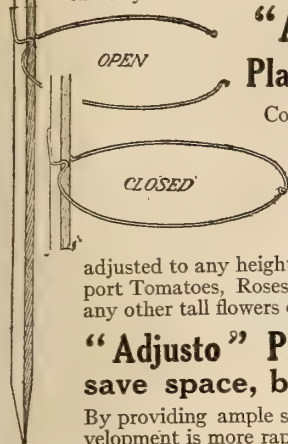
It's easy to identify genuine **G & B Pearl**—two copper wires in the selvage are the permanent mark—a Round Tag with our name is on every roll in the dealers' stores. Look for these marks—make sure they're there—and you'll get the handsomest, best wearing screens that ever went on your house. There is a dealer in your town who sells and recommends **G & B Pearl**. If you can't locate him write us for samples and literature. Address Dept. H.

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New York Georgetown, Conn. Chicago Kansas City

G & B Pearl is made in two weights—regular and extra heavy. The best hardware dealer in your city sells "Pearl."

System In Your Patriotic Garden

Plants or vines of vegetables or flowers, sprawling all over the ground, stand for a waste of space and labor. You can grow more of better crops, if you call to your aid



"Adjusto" Plant Supports

Consist of hardwood stakes, painted green, up and down which slide properly braced painted hoops. Quickly

adjusted to any height. Ideal to support Tomatoes, Roses, Hydrangeas, or any other tall flowers or vegetables.

"Adjusto" Plant Stakes save space, boost crops

By providing ample support, plant development is more rapid, more and better vegetables and flowers are assured. Keeping tomatoes off the ground prevents loss through rotting.

In 5 Sizes, at following prices

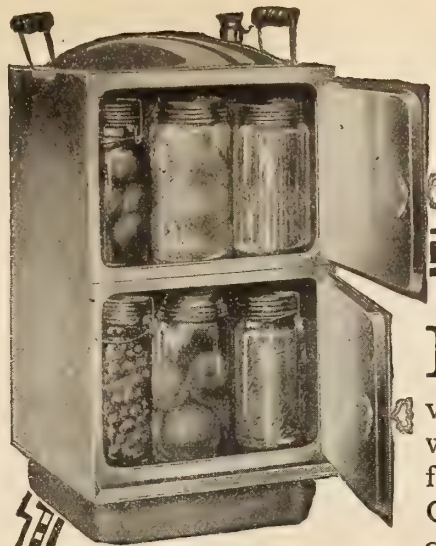
- 5 ft. stakes 20c each, \$2.25 per dozen
- 4 ft. stakes 18c each, \$2.00 per dozen
- 3 ft. stakes 15c each, \$1.75 per dozen

These serve for tomatoes, dahlias, peppers, roses, eggplants, etc. Small sizes, same as above, 18 and 24 inches, suitable for small potted plants, carnations, etc.

- 18 inch, 8c each, \$.85 per dozen
- 24 inch, 10c each, \$1.00 per dozen

Ask your dealer. If he cannot supply "Adjusto" Plant Stakes, write us.

The Forrest Seed Company
Cortland, New York



Abundant Food for the Home

HERE is the most convenient and practical way to practice food and fuel conservation. With Conservo you may can 14 quart jars of fruit or vegetables at one time—with Conservo you can cook an entire meal at one time—over one burner of your stove.

CONSERVO

Conserves Fruit—Vegetables—Fuel—Food—Time

It conserves, serves and saves. No housewife can afford to be without it. In canning, a new delicacy of flavor is secured and the rare flavor of fresh fruits and vegetables is retained. In cooking the food is cooked in its own moisture. No water necessary. Thus saving the valuable mineral salts and juices.

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Yours very truly,
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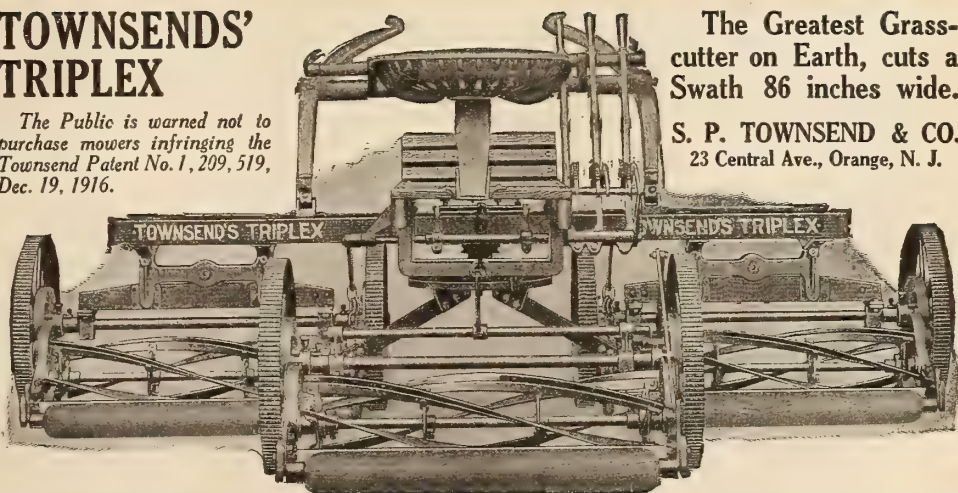
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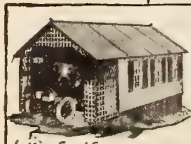
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THE GARDEN MAGAZINE

JUNE, 1918

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LEONARD BARRON, EDITOR

Published Monthly, 25c. a copy. Subscription, Two Dollars a Year.
For Canada, \$2.35; Foreign Countries, \$2.65.

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DOUBLEDAY, PAGE & COMPANY
GARDEN CITY, N. Y.

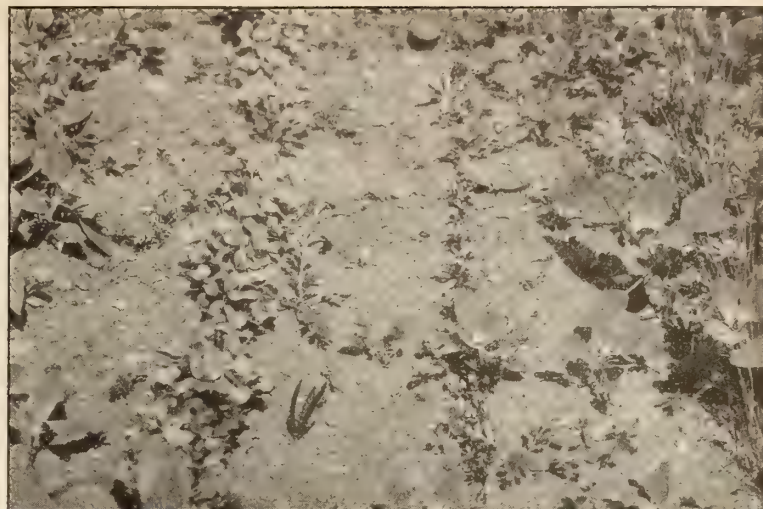
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BOSTON: Tremont Bldg.
NEW YORK: 120 W. 32nd St.,

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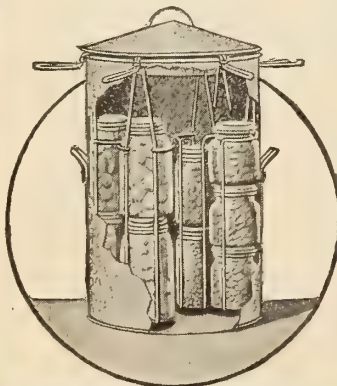
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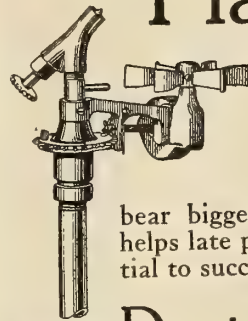
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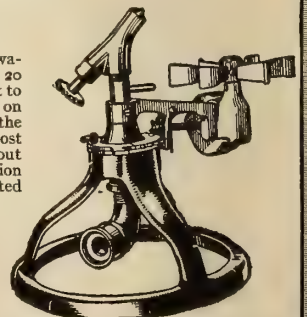
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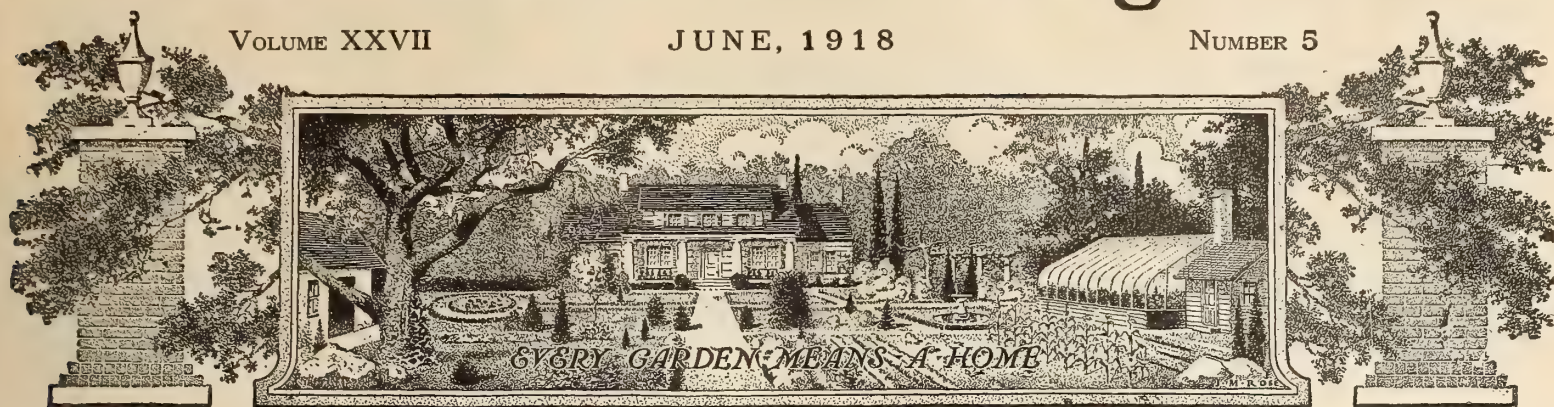


The Garden Magazine

VOLUME XXVII

JUNE, 1918

NUMBER 5



AMONG OUR GARDEN NEIGHBORS

Get Together or Get Left

FOR three years, the allies on the western front fought their individual battles. They fought well, but achieved little. Finally, we showed how to get together and *big results* are on the way.

The past three years have seen the home gardens turned into "munition plants" each summer—for food is ammunition. We have fought the garden battles valiantly, each individual doing the best he could. Results: Satisfactory crops while we kept at it but not very much to show for the work at the end of the season.

It is high time that home gardeners take the lessons to heart. Instead of making America a colossal vegetable farm of many little units, it should be made a gigantic coöperative enterprise in which each member works for one general big objective rather than to gratify individual desires. Fortunately, the ground work for such organization already exists. The National War Garden Commission has already shown the way. The gardens are started and the big object now to be kept in mind is the *saving of every ounce of surplus*, both individually and collectively.

In this matter of saving perishable garden crops, the individual will always be to some extent handicapped; sometimes only a little surplus, hardly sufficient to warrant the expense of time, labor and fuel, to conserve it; at others, the excess crops of the garden maturing so rapidly, that the individual finds it beyond his ability to cope with the situation single-handed.

The solution is to be found in closer co-operation among home gardeners in each community. Let there arise in each town, village and city a home garden exchange, offering housekeepers the chances to dispose of surplus and to cover needs. Let each gardening community have a coöperative canning kitchen of its own in which canning "bees" could be held regularly, either for the benefit of the hive or to benefit a great cause. Make use of already existing machinery. There are individuals and also bodies of public spirited men and women in each community whose interests may be obtained. The boy scouts or the campfire girls would form ideal lines of communication. You,

PREPARE FOR CANNING

¶ The United States Food Administration urges all who have war gardens to raise food wisely so that real needs will be met without avoidable waste. ¶ Vegetables which can be easily stored, such as potatoes, beans, beets, carrots, turnips, parsnips, etc., should be planted more extensively than the green vegetables. ¶ Green vegetables should be raised to meet daily table demands, and to furnish sufficient quantities for convenient canning and preserving. ¶ Last year there was great waste of green vegetables because they could not conveniently be canned or dried at the time they were ready to pick. ¶ The National War Garden Commission, Maryland Building, Washington D. C. has agreed to send to any GARDEN MAGAZINE reader, its 1918 booklet, "Canning Vegetables and Fruit". Write for it.

who so gloriously battle for the Red Cross, might well extend your patriotic energies and dedicate a few hours each week to the *prevention of waste in home gardens*.

Let us have more canning kitchens, lest the country will have to maintain soup houses as in Europe, in which to feed the needy. Let us can more food, collectively, lest he, who is "over there," experience pangs of hunger amidst perils which he is fighting hard to keep away from our shores.

Look Ahead: Canning and Fuel

AS THIS year's crop of food gardens nears the bearing stage, we may rest awhile and take time for consideration of the future. "What are you going to do with the crops after you get them?" and "how are you going to get the most out of them?" are questions to be settled *at once*, if the full benefit of the garden is to be realized.

The practical aspects of canning, drying, and preserving vegetables are dealt with elsewhere in this issue. But the question as to what may or may not be canned profitably is one to be answered by each individual, and should be settled on the basis of the nation's resources rather than individual preferences.

Consider root crops for instance. With beets, carrots, kohlrabi, etc., the home gardener has the choice of either canning them while young or of growing them to larger size suitable for storing in sand or soil for winter use. Full-grown roots of these vegetables keep better in soil storage because they are full of fibre and the cell contents are matured.

As is shown in a communication on another page it costs more than twice as much in fuel to cook full-grown vegetables as it does to cook the small, canned product. If, with coal at \$10.00 per ton, it costs 5c. to cook six large beets as taken from soil storage; while an equal bulk, in the form of a dozen small, canned beets requires but 2c. worth of fuel to get them ready for the table; then the practise of canning young crops needs no further defense.

The ultimate cost of putting the vegetables etc., on the table during the winter must be a determining factor in present moment plans. It will make the cost of jars at a dollar per dozen seem less high. In the long run, any investment in canning apparatus, jars, and other utensils made at this time means substantial savings later. Moreover, with reasonable care, such investment bears interest for years, while fuel, once consumed, is gone forever.

Is Your Garden Going to Suffer?

TAKE a piece of sugar and dip the lower end in your tea, coffee, or water. Lift it out of the cup and watch the moisture rise until it has permeated every particle of the lump. You are watching what the text books call "ascent of liquid by capillary attraction," a process that is in almost constant occurrence in your own garden, which is going on this very minute, in fact, unless it happens to be raining.

Look at the cracks in your garden soil. Toward these cracks or fissures, by way of millions of minute channels, the moisture in the soil works its way toward the surface, to be evaporated by the moisture-absorbing dry air. Where this process goes on for weeks, perhaps months, plant life stops. Land does not become a desert because the soil is poor, but rather because it lacks moisture.

The garden can get along without sunshine

for weeks at a stretch, without serious injury. Bugs may eat the greater part of a plant and yet not kill it. Some forms of plant life can get along without soil or direct sunshine as thousands of species of submarine weeds prove. *But every living thing must have water.*

Drouth is the greatest enemy of the garden. It paves the way for all the ills to which the crop is heir; it undermines the constitution of plants, rendering them susceptible to diseases. Diseased (i. e. weakened) plants readily succumb to attacks of insects. Prolonged drouth cuts short the yield of healthy plants.

The next few months will confront home gardeners with the problem of combating periods of drouth. There are two ways to fight drouth:—One is to supply moisture when the natural supply fails; the other method is to stop moisture from reaching the surface by constantly closing the soil fissures.

There is no *one best* way of irrigating the garden. Each method or system has some exclusive points in its favor. Generally speaking, one should adopt that system of irrigation that best fits the individual conditions of soil and general plan of garden. There is, however, *one uniformly poor* way of watering the garden and that is, to sprinkle it lightly and superficially each day. That will defeat the very purpose of irrigating by encouraging the roots to come up to the surface after moisture rather than reaching down for it. When you do apply water do it liberally, so as to thoroughly soak the ground. If done at night by means of some permanently installed apparatus there is economy of time too.

The other method to fight drouth is to keep the surface of the garden so finely pulverized by constant cultivation as to make evaporation impossible. Scores of special soil pulverizers and weeders are available for that purpose. Again, each gardener will have to determine which special implement suits his soil conditions best.

The ideal way to manage the midsummer garden is to *combine irrigation and cultivation* into one efficient team for both offensive and defensive purposes. When it becomes dry to a depth greater than two inches water the soil, and then, keep the moisture there as long as possible by maintaining cultivation.



"Not all the ammunition comes from powder factories."
—Darling in New York Tribune

Two Handsome "Spiraeas".—*Spiraea Aruncus* and *Spiraea kamtschatica* are two of the handsomest of all strong growing hardy perennials. The former, a native of Siberia and commonly known as the True Goat's Beard, has several synonyms, among them being *Aruncus Aruncus* and *Aruncus sylvestris*, but the generic name *Spiraea* is generally used in gardens. *Spiraea kamtschatica*, also known as *S. gigantea*, is a native of Kamtschatka. Both are lovers of abundant moisture and deep loamy soil and are seen at their best when growing in a half shaded position in the wild garden or woodland but are also valuable for the border or planting in groups in the pleasure grounds. *Spiraea Aruncus* has splendid foliage and large drooping plumes of creamy white flowers on stems five feet high. It blossoms in midsummer and is conspicuously ornamental for a long time. *Spiraea kamtschatica*, which belongs to the Ulmaria section, has large flat heads of white flowers also opening in July. When growing in a congenial soil and situation the stems reach a height of seven to eight feet, and the

immense foliage is quite striking. For planting by the waterside it would be difficult to imagine two finer plants.—*A. E. Thatcher, Bar Harbor, Me.* [Would it not simplify matters to confine the name *Spiraea* to the woody shrubs, and not use it for the many different herbaceous kinds?—*Ed.*]

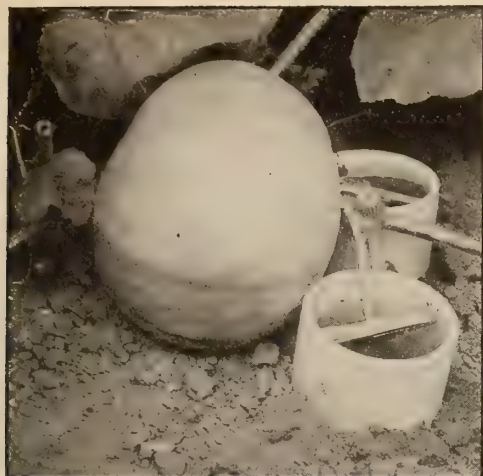
Fruit Preserving in Sand.—This season all garden produce is of especial value. In many ways it is possible to preserve fruits and vegetables, but in most cases this entails a certain amount of cooking. After some prolonged experiments a French scientist has given to the world a plan by means of which many kinds of fruits and vegetables can be kept for a lengthy period in a raw state. The method is so simple that a good many people will like to try it. In the first place, it is needful to secure a quantity of fine dry sand. It is well to sterilize this by baking it in an oven for a few hours. By spreading the sand out on big dishes and placing these in the oven it is easy to sterilize a considerable quantity of sand at a time. Now get some wooden boxes; these might be of any convenient size, although they should not be less than five or six inches in depth. The next step is to collect the fruits and vegetables. The very soft fruits such as raspberries, strawberries, currants, etc., are not suitable. In the experiments good results were secured with plums, peaches, tomatoes, and such vegetables as cucumbers, marrows, and even peas and beans. It is very important that all the specimens should be quite dry externally and that they should be without any blemish. In the case of fruit it is well that this should not be quite ripe; certainly there must be no sign of splitting open. Take each fruit and vegetable and wrap it closely in tissue paper, twisting the ends together at the top. Now spread a layer of sand in one of the boxes; this should be about two inches deep. Then place out the fruits or vegetables allowing two inches between each. Finally the sand is packed in all over the fruits, the most important thing being to see that there is a good two inches of the material round each specimen. If undisturbed, sand-packed fruits and vegetables will keep fresh and of good flavor for many months.—*S. Leonard Bastin, Eng.*



Aruncus sylvestris (sometimes called *Spiraea*.) the Goat's Beard, is a grand perennial herb for bold effect in midsummer



Filipendula kamtschatica (commonly called *Spiraea gigantea* in gardens) is a worthy companion, flowering in July



Here's the pumpkin before water feeding began;—

Making Pumpkins Grow Fast.—A good way of hustling the growth of pumpkins, marrows, etc., is to feed the fruits with water. It is only needful to secure some pieces of round lamp wick. Holes are made in the stalk of the fruit and, into these, one end of the wick is inserted. The other end of the wick rests in a jar of water which is kept well supplied. The pumpkins grow at twice the rate they do normally and are ready for cutting much sooner. In this way the produce secured from the plant is largely increased. The plan is well worth following out.—*S. Leonard Bastin*

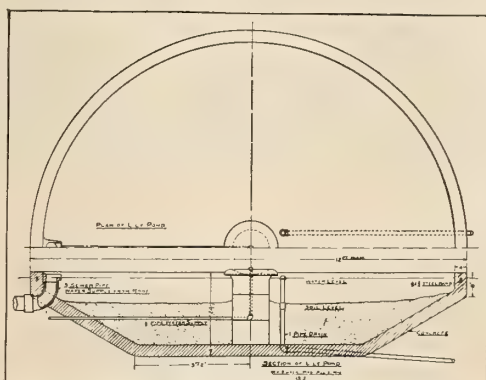
Potatoes for Late Planting.—Although potatoes planted from May 1 to 20 usually yield more than later plantings, the natural reduction in yield from the later plantings can be almost entirely prevented by sun-sprouting the seed. Growers who must plant their potatoes late should begin sun-sprouting at once. Set the potatoes in shallow trays, with the "bud" end exposed to partial sunlight. Exposed for four to ten weeks, the sprouts will grow only an inch or less in length and then remain dormant until planted. This method is adapted only to hand planting as the sprouts should not be broken off. The sun-sprouted seed will start into vigorous growth as soon as planted. The yield from sun-sprouted stocks at the Ohio Agricultural Experiment Station was twenty-nine bushels more than from cold storage stock and thirty-four bushels more than from seed kept in a cellar. In this experiment the three kinds of seed were all planted June 30. The sun-sprouted seed planted at this late date yielded four bushels less than cellar seed planted May 10.—*W. F. Bruce, Ohio State University.*

Dried Vegetables Make Delicious Dishes.—If the housewife will just use a little thought, skill and time in the preparation of dried vegetables for her family, she will be amply repaid by the deliciousness of the dishes she prepares. No matter how the dried vegetables are to be cooked, they must first be soaked, at least overnight, in a large amount of water. Then drain and cook till tender in water containing a speck of ordinary baking soda. Perhaps there is nothing else that the housewife cooks that requires as much care in seasoning as do dried vegetables. Salt, pepper, lemon rind, nutmeg,

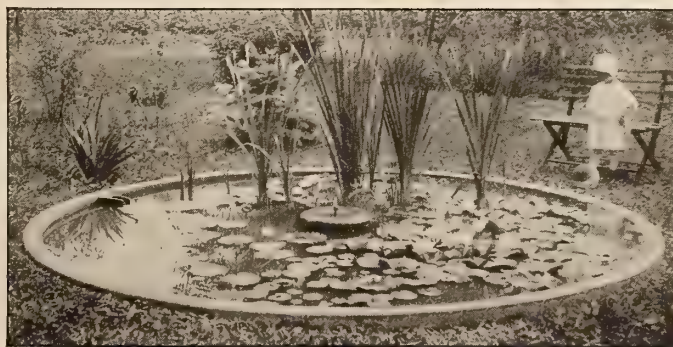
onion, celery salt and bits of celery, mustard, cheese, peppers and tomatoes, all add flavor. Then, as most of these dried vegetables are low in fat content, it may be well to add it in cooking, as in the case of pork and beans and peas and bacon. There are a great variety of ways in which to use these vegetables. They are important as meat substitutes and can be used for the main dish in a meal—examples are bean loaf and baked beans. They may be used in making very nutritious soups. Salads prepared from them are both nourishing and attractive. When combined with other materials, as macaroni, spaghetti or cheese, they are very good. In fact there is almost no limit to the combination that may be made by the clever housewife.—*Magdalene Hahn, Colorado Agricultural College, Fort Collins, Colorado.*

Azaleas for Northern New England.—Can you inform me where I can procure Azalea daphurica or any other rose-colored hardy Azalea? Do you think Azalea yodagama will be hardy in northern New England?—*Harold G. Rugg, Hanover, N. H.*
[—Generally speaking, hardy Azaleas are difficult subjects in New England, with the possible exception of Azalea viscosa. *Ed.*]

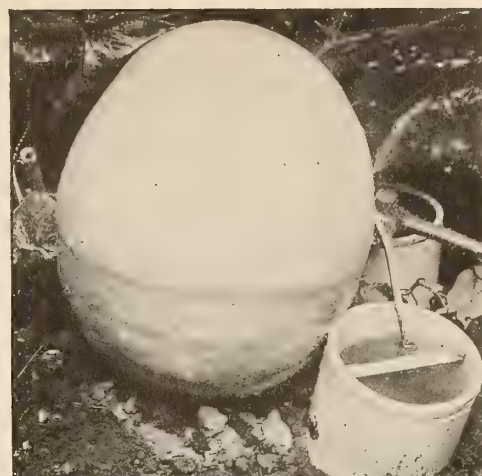
A Small Water Lily Pond.—Having received so much benefit from articles in THE GARDEN MAGAZINE I have ventured to relate my experience in making a small Water Lily pond. Such a Lily pond is suitable for any modest home. Considering labor and expense, I think it was the most satisfactory thing I had in the garden last summer. It is twelve feet in diameter and two feet deep and built of concrete; the sketch shows other details of construction. The water supply comes from the roof of the house, supplemented by a small pipe from the city system, for use in dry, hot weather. Any surplus flows over



Section and plan of Lily pool shown below



This 12-ft. Lily pool was constructed at little expense, and made a practical home for hardy aquatics in this Wisconsin garden



and three days later! The wick attachment is clearly seen

the edge and soaks away in the lawn. The only form used for the concrete was made of thin boards, inside and outside of the rim, secured by stakes. It took two men half a day to put in the concrete; all the rest of the work I did myself, mornings and evenings. The bird bath was made of concrete by forming a hole in the ground and using an ornamental ring from the heating stove to form the curved edge. The cost was as follows:

4 cu. yds. sand and gravel	\$4.50
13 bags Portland Cement	8.50
Labor	7.00
Pipe, Lumber, etc.	5.00
Total	\$25.00

I filled the concrete basin with garden soil to a depth of fourteen inches and planted four or five roots of Nymphaea Gladstoniana, which proved very satisfactory, as they are hardy and multiply rapidly, and we had from five to ten large white flowers in bloom all summer long. As an experiment, I placed two small gold fish in the pond early in the summer and when the water was drained off in the fall, I captured, besides the original pair, about twenty-five little fish ranging from one-half to two inches in length.—*Wm. H. Singer, West Allis, Wis.*

Share Your Garden With the Settlement.—To owners of gardens sounds the call for service; flowers are needed by the children in the city tenements and in the charity hospitals. Send them the flowers that wilt in your gardens for lack of hands to pick them. This year, in the rush of Red Cross work and various foreign reliefs, there is danger that the poor at home will be neglected, and it is your patriotic duty to lend your assistance. Pick the flowers soon after they blossom, though if you take a few wilted blooms to make a boxful, the children will not care; flowers are flowers to them whether wilted or not. Pack them carefully in well-dampened tissue paper, mark the box "Perishable," and send via express to the settlement house in the city nearest your home. Some companies ship boxes marked "For Charity" free; however, any charge made is but nominal. Select flowers of the hardier varieties, Snap-dragons, Phlox, Sweet Peas, Nasturtiums; and in later season, Daisies and Asters. Since you can not bring the children to your garden, why not send the garden to them?—*Helene Edwards, Indiana.*

HOW TO COÖPERATE IN DRYING AND CANNING

WAR has made it imperative that every ounce of foodstuffs produced in this country be utilized. Food will win the war; and the adequacy of our food supply depends very largely upon how well we conserve our summer surplus of fruits and vegetables. Hence canning and drying have become patriotic duties of the very greatest importance.

Every patriotic American woman should can or dry enough food for her family needs for the winter.

The quantity of garden products grown in America this summer will be enormous. In order that all possible may be saved, it will be necessary to organize for conservation, just as it has been found essential to organize for production. On a rising scale as to the size of operations mutual canning may be divided into three classes:

1—Two or more families working together with equipment bought or made for the use of all.

2—Neighborhoods organized through a Women's Club, Church or some existing neighborhood organization.

3—Communities, organized through the local Council of Defense, the Mayor's Committee, the Chamber of Commerce or the Women's Club.

Through neighborhood work any number of families from two to fifty may work along the lines of mutual canning and drying. One set of apparatus will serve for all. The cost, thus divided, will be small for each household. The results will be of vast value, as each family will thus be prepared to feed itself next winter and he who feeds himself feeds the nation.

A neighborhood club is easily formed. It consists of a number of women, united by organization, for the purpose of canning and drying, and using a common standard. In the simplest sense this need not be an organization at all. All that is necessary is for two or more households to agree on working together in the purchase and use of equipment. A canner costing \$25 to \$50 will serve for small families. If six households use it the initial cost is but \$4.25 to \$8.33 per family. A drier for the use of several families may be bought for \$25 or \$30.

Before it can successfully enter upon this new business, the community must know approximately how much business will be done, what supplies will be needed, how much work will be necessary, who will do the work, etc. From home gardeners some estimate may be had of the probable production and the ordinary demand. From the facts so ascertained, it will be possible to make a working estimate of probable surplus and plan accordingly.

PREFERABLY the food conservation activities of a community should form

part of the work of a central organization, such as the local Council of Defense, the Committee of Public Safety, the Mayor's Committee, the Chamber of Commerce or a leading Women's Club. It is inadvisable to form separate organizations to carry on different phases of community war work. Where possible all activities should be centred and controlled through separate committees.

Just as publicity is necessary to the success of a war loan drive, or a Red Cross drive, so publicity is essential in launching the movement for community food conservation. The support of the public press is a prime requisite. The pulpit should be enlisted as well. Through the public schools the children, particularly boys and girls of high school age, can be reached effectively. Valuable publicity may also be had through the moving picture theatres, the managers of which will cheerfully coöperate.

FOLLOWING the preliminary campaign a public meeting should be held for the actual working out of plans for community action. If a central organization is not directing the movement, a permanent committee should be appointed to conduct

determined is that of location. This should be central and suitable to the purpose. Wherever possible, school kitchens should be utilized. They are already thoroughly equipped and mostly are unused during the summer time. Last year a good sized city in central Pennsylvania used the kitchen of a centrally located church.

If quarters are not already equipped, it will be necessary to install the proper outfit and the extent of this outfit, will be determined by the prospective amount of work to be done. That will be determined from the preliminary garden survey. It may be necessary also to raise an operating fund. If it is, connection with the local Council of Defense will be found especially desirable.

THE equipment needed is in no way complicated. A community steam pressure canner may be bought for from \$36 to \$90 giving capacity of 100 to 500 quart jars per day. A drier with capacity for a large number of families may be made by local women. Working suggestions for actual construction are given in "Home Canning and Drying of Vegetables and Fruits" issued by the National War Garden Commission and can be had on request.

The manager must be a person of trained executive ability. Women who are experienced in club work and management will often prove most acceptable leaders. There must be one or more domestic science experts to instruct the workers and see that the canning is done according to standard. There should be a checker, to keep account of products, a book-keeper, and many workers.

WHEN all the community surplus is to be conserved, provision must be made for

collecting the excess of small gardens. A community cannery in the East solved this problem by organizing a motor collection service with motor-cars lent for that purpose. Small garden surpluses and the excess of suburban gardens were delivered by producers on certain days at convenient centres and from there brought to the central cannery by this motor service, which made collections with all the regularity of a railroad.

One of the difficulties encountered in the community cannery is the question of workers. It is hardly practicable or possible to pay the workers, at least in cash. In some places payment has been allowed in canned fruits, a credit of so much per hour being allowed to these workers. And unless workers are paid, they are quite likely to take their duties too lightly and be unreliable. One community cannery solved the labor problem by appointing a different woman to be responsible for the help on each day of the week. Each of these women secured volunteers who offered to work on given days each week during the entire season.

the campaign. In many communities the United States Department of Agriculture will have demonstrators available who will be helpful in organizing and supervising the work. In other communities expert supervision should be procured. Domestic Science teachers in public or private schools may be procured. The State Experiment Station, State Agricultural College or County Agent can usually place a community in touch with supervisors. In some communities, in 1917, a few women were selected to take special courses in canning at the High School and give demonstrations to their neighbors.

The actual canning or drying can be accomplished in any one of several different ways. The community cannery offers advantages in the way of organization and concentration. It centres all the community's efforts in one plan. It makes it easier to collect and distribute products than when the work is done in different centres or in various homes.

IF IT is decided to have a community cannery or drier the first question to be



A rural coöperative fruit and vegetable market in which "no commissions" is the rule

THE MONTH'S REMINDER, JUNE, 1918

The purpose of the Reminder is to call to your attention the things which should be thought about or done during the next few weeks. For full details as to how to do the different things suggested, see the current or back issues of THE GARDEN MAGAZINE. (An index of contents is prepared for each completed volume, and is sent gratis on request. The READERS' SERVICE DEPARTMENT will also cite references on any special topic if asked—that's its job.) To get the full benefit of this, check off with a pencil, in the square ☐ provided for that purpose before each paragraph, the items that apply to your own case, and use the page as a reference list.

JUNE is the month in which to do seemingly unnecessary jobs. The gardener who deserts his or her garden before it is cleaned up is only postponing the day of reckoning. While the rush of April and May planting may have let up a little, there are other jobs coming on; and the man who has not had experience is likely to let some of them slip until too late, or until they cannot be done to the best advantage. Don't let up as long as you can see anything to do.

In the Vegetable Garden

PLANT tender crops. ☐ In many of the more Northern states there is danger of frost until after Decoration Day. Where the season is so short, it is all the more necessary to get the very tender things, such as ☐ tomatoes, ☐ peppers, and ☐ eggplants, in with a rush when the danger point is passed. The same applies to seeds of the tender vegetables like ☐ melons, ☐ cucumbers, ☐ squash, ☐ okra, etc.

Much of the success of these things depends on giving them a running start. Plenty of nitrogen; readily available. Put a couple of handfuls of tankage, or dried blood and bone-meal (mixed) in each hill when preparing for planting.

Don't wait until your first sowing of peas or beets is all used up before putting in another. ☐ Make succession plantings often enough to keep a constant supply coming on;—every two to four weeks, according to the length of time the crop to be followed will remain in condition for the table.

☐ Start plants for the fall and winter gardens. One of the most important things to do this month is to make sowings of ☐ cabbage, ☐ cauliflower, and ☐ Brussels sprouts in time to have good rugged plants ready for setting out early in July. Sow seed thinly—two or three seeds to the inch in well prepared soil. Firm carefully. Label carefully.

Plenty of time yet for the main crop of celery, but ☐ put in some plants early this month for an extra early supply. If your own plants are not big enough, get a hundred or two from your local florist; or order by mail. Remember that celery must be well fed, and particularly well watered, to make good growth and be tender.

Keep the early planted garden going! The plant food in the soil becomes available for use rather slowly until thoroughly decayed. A light top dressing spread along the row or around the hill now, and raked into the ground, will do wonders to stimulate continuous, even growth; thus laying the foundation for big yields later.

Save all the moisture for future use. Keep on cultivating—no matter how free from weeds your garden may be! Every time you go over the garden means just that much moisture saved for thirsty plants later in the season.

Watch out for bugs. Be ready to fight them on their first appearance. Lay in a stock now of bordeaux mixture, arsenate of lead, and nicotine extract. These properly used will take care of most of the blights, bugs, and sucking insect pests that garden plants are heir to. Stop criticizing the administration

long enough to apply practical preparedness to your own back yard.

Prepare for Canning and Drying

FAILURE to prepare for canning etc. is to pass up the biggest money saving opportunity that will ring at your front doorbell in a twelvemonth. "Preparation," however, doesn't consist in merely buying a dozen glass jars and a tin funnel next time you happen to think of it. Plan now what you want for this winter, and then plant to produce just those things, especially for winter (see page 229). ☐ Order your seeds for winter crops now. ☐ And buy a suitable equipment for canning and drying—one of the best paying investments you ever made.

Plant for winter storage not earlier than the middle of this month. ☐ Plant some parsnips and salsify the first part of this month, and see what a difference you will find compared with the overgrown, stringy product you are used to harvesting in the fall.

In the Flower Garden

SET out seedling plants started in the cold frame, or the seed-bed ☐ last month or the latter part of April. If thinned out rigorously as soon as well started, as they should have been, they will be sturdy little plants now. Nothing to be gained by delaying any longer putting them in their permanent positions. To get the quickest growth, always use a little "starter" (bone meal, or bone and tankage or dried blood) where each plant is to be set, instead of just "putting it out." And remember that flowering plants need just as carefully prepared soil as vegetables if they are to thrive well.

Pinch back for plentiful blooms! You will find, if you look over your flower beds carefully, many things, that are making very rapid growth, ☐ but are making it all in one direction—straight up in the air. Snapdragon, Heliotrope, etc., should be pinched back quite severely, to induce the laterals to make a strong growth. This may sacrifice the first spike of bloom, but it will be much more than made up later. Spare the top and spoil the rest!

Keep all flowers picked! The plant grows and blooms not to satisfy your sense of the beautiful, but to produce seeds that its kind may not perish from the earth. The way to make it keep on blooming is to prevent its forming seeds. Therefore, the more flowers you cut ☐ before they reach the seed-forming stage, the more flowers you will continue to have. This is particularly true of a number of the early flowering annuals, such as Sweet Peas. Make it a rule never to let a Sweet Pea blossom wither on the vine, and you will have Sweet Peas in bloom longer than you ever had them before.

"Renovate" your bloomed-out flowers. Here is a little experiment you can try which is well worth attempting. Although not always proving successful, it will "work" if conditions are right. As soon as your Sweet Peas, or other annuals sown from seed, begin to "peter out," apply the shears and cut them back, clean,—almost to the roots. Water generously, and as soon as the new growth

starts, work in a top dressing, or apply liquid manure. If the plants are treated this way in time—that is, before they begin to actually die—it is often possible to get a new crop of blooms which, if not fully as large as the first, will be prized as much for coming out of season.

Sow "succession" crops of flowers. There are many flowers which could be had all season, or nearly so, by making several plantings ☐ instead of one in the spring; and often a single package of seed contains enough seed for the whole season's supply. Gypsophila, Pansies, Poppies, etc., should be kept in supply in this way from early summer to fall.

☐ Make another planting of Gladiolus. The only trouble with this splendid flower is that it will not continue to bloom until frost from a single planting. The bulbs are so cheap, and they will last so long, that there is no excuse for anyone not making a late planting now, to be in its glory during September and early October. Put some of the bulbs deeper than others, so that they will not all come along at the same time.

In the Greenhouse

KEEP your house going through the summer. Melons, tomatoes, and other things started now will give you a crop when Jack Frost is again making a drive on the outside garden. Do you realize that a portion of your house, properly shaded, will be cooler than it is out-of-doors in July and August?

☐ Start house plants for next fall and winter now. "Grown on" during the summer months in the greenhouse, they will be in ideal condition for brightening your living rooms next snow-tide. Get some young Ferns, and by keeping them happy from now until next December, you will have the choicest kind of a collection of Christmas presents ready to help meet the high cost of giving.

Keep the greenhouse sanitary. Remember that it is much more difficult to keep your summer plants under glass free from insects, than those which are out-of-doors. Spray or fumigate just as regularly—if not as often—as you water.

☐ Clean out that boiler! As a rule boilers wear out more during the summer than in winter. Ashes and soot collect and hold moisture, and cause rust. Get your boiler thoroughly clean, then put two or three quarts of kerosene in your compressed air sprayer, and give it a rough "painting" before you "lay it by" for the summer months.

The Frames

KEEP the frames busy all summer. In them you have the richest soil on the place; don't let it loaf. As soon as the last of the vegetable and bedding plants, and early crops are removed, get a summer or fall crop started. If you don't need them for anything else, sow clover or cowpeas, to fork under in the fall—they are just as useful here as in the garden.

Start perennials early. ☐ Order your seeds of Pansies, Daisies, Forget-me-nots, Canterbury Bells, etc., now, so that you can get a good early start. Then if the first sowing

is not successful, you will still have time for another.

□ Get a frame or two ready for this work. Clean it out, put in fresh, clean soil, and provide a cloth covered sash, which may be supported a foot or so above the frame, to shade it, while still allowing free circulation of the air.

□ Give the house plants a rest in the open. Fork up an empty frame, put in cinders sev-

eral inches deep, and "plunge" the pots in this, up to the rim. Set far enough apart so that they will have an abundance of room. Prune them back, removing old wood, in order to get a strong new growth for next winter's flowering.

In the Orchard

DON'T neglect the regular summer sprays. For aphids, add nicotine extract. *Thinning out*, so that only a limited amount

of fruit remains for the tree to attempt to mature, will insure really first class fruit. This is especially true of small trees that are just coming into bearing.

□ Go over your peach trees early this month for borers.

□ Keep a strict watch for currant worms, and spray immediately with arsenate of lead, until the fruit is well formed, when hellebore may be used, as it is readily removed.

The Garden Recruits' Instruction Class

Keeping Up With the Growth of the Crop—Vegetables to the "King's Taste"

(See Illustrations opposite)

TYING plants to supports is done for several reasons. First of all there is the giving of light and air; the crop is also better ripened; it is clean too, and so tying makes for economy in several ways.

Raffia is the best material for tying purposes as it is cheaper than string and does not cut the plants; when fall clean-up comes, raffia is easily broken apart. It can be purchased at any supply house. "A stitch in time saves nine" is very true of supporting plants. A timely minute at this season will save many an arduous hour later on.

When the pole lima leaders start to run on the pole they should be loosely tied to the support, two tyings about 10 days apart will bring them into contact with the pole and they will thereafter take care of themselves. This applies also to all other types of pole beans such as Kentucky Wonder, Old Homestead, etc.

Tomatoes require supporting the entire growing season if it be done at all, and if you are not going to be persistent it will be better to let the vines sprawl about on the ground—that is much better than only half supported. A good plan is to select the three most promising leaders and support these to the trellis or stake, all other shoots being removed as soon as they show.

Keep early celery tied up during its season of growth. The chief objection to hilling during hot weather is the liability to cause rust, so just gather in the tops with one hand and tie loosely with a piece of raffia, but never do this when the plants are wet either from dew or rain. This also applies to endive and lettuce which are sometimes tied to blanch them.

Staking Plants

IT IS the *unusual* season that we must provide for at all times. Hence in both flower and vegetable gardens we provide supports to meet possible strains of wind and storm. An untimely storm oftentimes makes us regret that we didn't take the precaution to properly support our frail garden friends, but regrets do not repair the damage. It pays to stake plants, it inculcates thrift and other good garden habits and no really good gardener "takes a chance"; he stakes the plants with exactly the same purpose in view that you pay insurance on your household effects. You don't *expect* a fire, you don't *want* one, but if it does happen you are protected against loss.

Peppers and egg plants although quite sturdy will sometimes get damaged from only moderate wind and a single stick with a couple of tyings will prevent them blowing over. Okra, too, is sometimes injured, but a few stout stakes in the row, and some binders' twine laced between the plants will serve amply. This method can be applied to corn that sometimes gets weak and lanky, or to straighten up any somewhat damaged.

Tomatoes can be supported by a few barrel hoops or a trellis made of stakes and held in position with twine, in fact it makes little difference what you use. It is simply the necessity of having something substantial enough to protect the plants against storm and sufficiently strong to keep the fruits off the ground. The result is earlier and better conditioned fruit because of the admission of air and light.

Beans are sometimes supported by placing a few stakes either side of the row and running some string along. Ordinarily this is not necessary, but it is a good practice in wet soils to prevent rust, especially with the wax podded types.

On wet soils it is desirable to keep the vines of cucumbers, squash and pumpkins lifted from the ground, and this is done by laying some ordinary pea brush around the hills and allowing the vines to scramble over it.

When to Give Liquid Feeding

IN GOOD gardens where the soil was properly fertilized in the beginning of the season there is little occasion to feed with liquid fertilizers; but for poor soils or new gardens, liquid feeding offers a ready means of correcting early spring errors. Top dressings are slower than liquid manures as they must await the action of the elements to complete disintegration before the plants can assimilate them; liquid feedings are immediately available and are therefore much quicker.

Onions have a very limited root system and, therefore must have abundance of plant food close at hand. When the tops turn a sickly yellow the need of fertilizer is indicated. Apply once a week a solution of cow or sheep manure (using a bushel dissolved in a barrel of water); hen manure used one-third the quantity to an equal volume of water. Treat leeks exactly like onions.

In late summer the need of a little feeding is sometimes felt by those crops that remain in the garden all summer. Swiss chard getting tough simply means that available food is exhausted; lima beans ceasing to make new productive vines, tomato vines turning yellow, or parsley losing color. All garden plants must be watched and feeding in liquid form may save many a crop from disaster and also improve others.

Cultivating the Soil

WHY do we stir the soil? Not because the exercise involved is the best body builder in the world; nor can it be to kill weeds, since well managed gardens contain no weeds. Cultivation is done simply to conserve or retain the natural soil moisture which is so much better than any artificially supplied water. When rain falls it penetrates the earth washing down the soluble food elements in the soil. If the surface of the ground is allowed to bake the soil moisture is drawn to the surface and is soon dispelled or evaporated by the wind and sun. Remember that *soils that are allowed to bake are casting into the air a goodly proportion of their fertility*. The upward passage of soil moisture if not checked, is almost as great as the downward passage. When we stir the soil we form a blanket of loose earth which arrests the upward passage of moisture and holds it in the soil for the use of the plants. Cultivation also admits air to the soil.

Stir the soil deeply. Four inches is none too deep as, if practised continuously, it effectually discourages surface rooting.

Gathering the Early Crops

IT PAYS to give strict attention to maturing crops, seeing that they are harvested in prime condition. Make a practice of gathering all the vegetables that are in perfect condition, canning those that are not required for immediate use. Many gardens fail to pay dividends because of the neglect to gather their vegetables at the proper time. One of the greatest assets of a garden is the satisfaction of having the best that can be had. No amount of wealth can put flavor into

vegetables. The quality of the vegetables that grace the table of the richest man in the land is no better than yours *only he employs some one who knows enough to gather the vegetables when young and succulent*. The same thing is obviously possible to the smallest garden owner. Pick your vegetables when small and those you can't use put away in glass for next winter.

Stop cutting asparagus just as soon as the peas are in bearing. The plants must have an opportunity to build up crowns for the following season's growth. The proper way to gather beets, carrots, turnips, onions and other root crops is to feel around the crown with the forefinger and pull those that have attained size. Some are bound to develop before others and by using first those that mature first you are assured of the longest supply of tender vegetables.

Keep Up Successional Sowings

THE secret of a good garden all the season lies in the frequent sowing of seeds in small quantities. This prevents the feast and famine type of garden which is far too common. Study the planting directions in this and last month's GARDEN MAGAZINE.

Lettuce, string beans, corn and radishes should be sown twice this month; beets, carrots and cucumbers should be sown once.

Sow early this month for fall crops of cabbage, cauliflower, kale, brussels sprouts, and celery. For this purpose, prepare a little bed or better still use a frame. Sow in drills very thinly and when the plants have made their first character leaf, transplant to prepared beds about 4 inches apart from which they may be transferred to the garden when large enough to handle.

Bag the Summer Bugs

WHEN our succession sowings are done and the cultivator has been run down the last row, a feeling of satisfaction and repose comes over and we are inclined to take a well earned rest. But stay; there is yet work to be done! Pesky potato bugs or some other intruder is moving in force on the cherished crops. Annoying? Yes! but don't get worried or excited. Bugs and other garden pests cease to be a factor when you learn something of their habits and how to fight them. Turn back to last month's GARDEN MAGAZINE for the complete story. And remember the simple rules of strategy: for all bugs that *eat* the foliage use *poison* (arsenate of lead is preferred); for vegetables that are to be used shortly use a non-poisonous insecticide such as slug shot or bug death; for *sucking insects* (such as aphids) use a *contact spray* of tobacco or kerosene preparation; for blight, rust or other *diseases* use *bordeaux mixture*; for *beetles that bore* such as cucumber beetle, use *contact sprays applied with great force* as their hard bodies protect them considerably.

The common error in fighting insects is neglecting to apply the remedies until the vitality of the plant is seriously taxed and therefore it has not reserve force enough to recuperate. Mild preventives such as tobacco dust or light liquid sprays are advisable when plants are first infested.



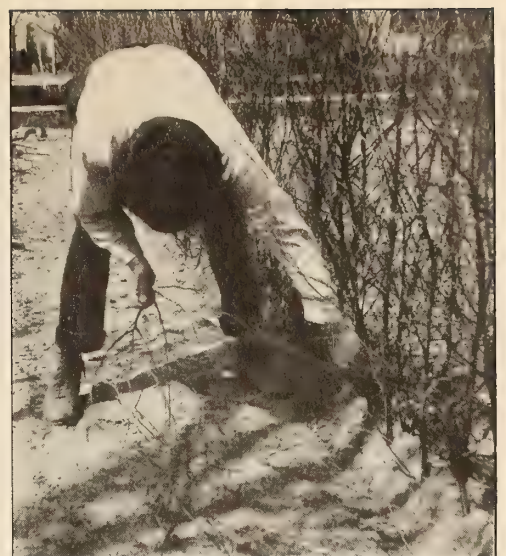
Cutting Swiss chard. The young heart leaves will make a second growth and give more cuttings



Gritty berries are not entirely pleasing. Put hay, straw or some other mulch under the fruit clusters as they form

The Garden Movies No. 6

The young plants need education in the way they should grow up. Start the training early, and at the same time insure against loss by storms and winds—Gathering when things are right



Brush is the ideal support for peas. Insert on both sides of the row for best results, and before plants can run



Catch the young tomato and tie it to a stake before it has a chance to spread; and then keep after it



Quit cutting asparagus when peas begin to bear. Remember this summer's growth lays the foundation for next spring's cutting



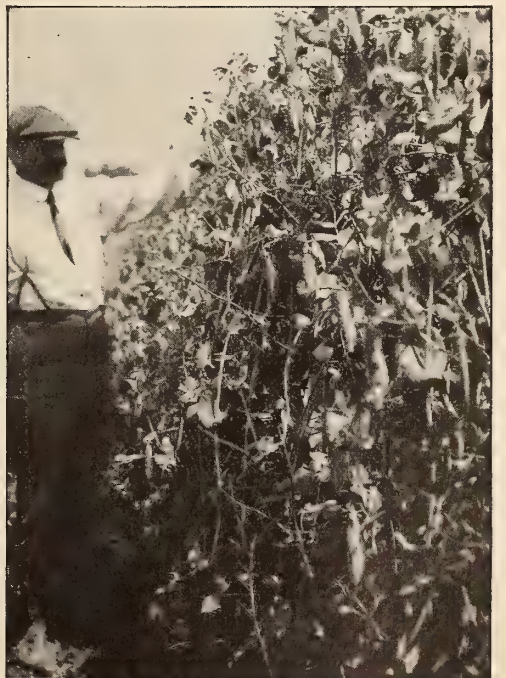
A rubber band slipped over lettuce, etc., keeps out the light and ensures a blanched heart



It pays to make climbing easy for the lima beans. Thus supported they ripen better and evenly



Gather root crops as soon as ready, while still young. Use the finger to determine which roots are "formed"



Plant food quality varieties because they cost no more in attention than poor ones

War Gardens and the Helping Hand of Women

CHARLES LATHROP PACK President, National War Garden Commission

IN THE most literal sense of the term it may be said that women are "taking a hand" in helping to win this war and playing a far more important part than ever they were called on to perform in any previous conflict of the world's history.

The service that the women are contributing to-day cannot be over estimated. It is invaluable. The unanimous testimony of the most prominent officials, military and civil, of the various nations is that the war could not be carried through without the help that the women are rendering.

In previous wars it has been the soothing hand of woman which has cooled the fevered brow of the wounded and ministered to the dying. But outside of hospitals and the occasional picturesque performance of a Molly Pitcher, there was little in the way of actual war preparation that the so-called "weaker sex" were called on to do. Women to-day have shown that they are capable of standing by the side of their men and that virtually all of the tasks—munition making and all the rest—which in an earlier day would have been left to men can be executed and are being carried on with efficiency and dispatch by women.

OF ALL the work which women are doing to-day there is none more congenial to them, none to which they can better apply the knowledge and the natural aptitude which they possess and none that is more important in assuring the ultimate success of the arms of the Allies, than in the production and conservation of food. From her place in the home, where the growing scarcity of food and the resulting high prices make themselves felt in almost every family, she readily perceives the great part which this factor is playing in the war.

There is no truer slogan among the many which have been sounded since the beginning of the war than this: "Food Will Win the War." Even after other supplies were about exhausted a nation might struggle along for a time and maintain its independence against a foreign foe, but if there were no food left all would be lost.

On this account, therefore, food becomes an all-important problem. Every bit that can possibly be produced must be grown; and none must be lost. Production and conservation are twin handmaidens fighting to stay the devastating grip of threatening famine.

THE war gardens of the United States reaching the magnificent total of more than 5,000,000 this year, are accomplishing wonders in adding to the food supply of the nation. Reports to the National War Garden Commission from cities, towns and villages in all parts of the country, show the zeal and the patriotic enthusiasm with which the home soldiers of the soil have gone after the Kaiser with the hoe.

Now that the food is being produced in large quantities in this way it is essential that none be lost. Here is where the American women can perform one of their most patriotic and helpful services. In addition to the part they have taken in encouraging the planting of war gardens, and in many cases actually getting out and doing some of the gardening work, they must see to it that none of the vegetables and fruits which are being raised be allowed to go to waste.

Canning and drying of vegetables and fruits must be made adjuncts of the war garden work. Those products of the home plot which cannot be consumed as they ripen must be stored away on the pantry shelves for future use. It is just as important to be ready to save wheat, beef and the other supplies which must be shipped to Europe during the winter months as during the summer. There must be a "winter garden" on the pantry shelves; and the vegetables there must be substituted for the more solid and compact foods needed for the American army abroad and the armies and civilian populations of this country's allies.

The same strong arguments which show the necessity of as large a production as possible, hold true for the conservation of food. It is an unpatriotic act to waste food at any time. It would be just as foolish, just as contrary to the best interests of the country to raise a large supply of food in our war gardens and then through oversight, carelessness or any other cause, to permit a large part of it to go to waste, as it would be to construct a fleet of vessels and then allow them to swing idly at anchor in our harbors, or to manufacture tons and tons of ammunition and hundreds of big guns and not send them to the front where they are needed.

Food preserved on the kitchen shelves or in the cellar will help to relieve the congested railroad situation in just the same way as a large supply of summer vegetables grown close to the kitchen door. In both cases it takes from the backs of the railroads part of the heavy burden, and permits the turning over of thousands of freight cars for more essential war work.

AGAIN, the saving on the market bill must be considered. Canned vegetables bought at the store in the winter time are expensive; and if these products can be put up at home during the summer months when there is a plentiful supply, there will be need of little outlay for this part of the family menu. There are Liberty Bonds to be bought and a hundred other ways in which the country must be assisted to win the war. The money saved through the preservation of the surplus supply of vegetables from the war gardens of the nation, will go far to help in the purchase of war saving stamps, and so on.

The value of home canning and drying as a patriotic service increases with every day the war is prolonged. Every added day of war sees the world's food stocks lowered. The cupboards of those nations which have been longest in the struggle are already bare. Left to themselves our allies would speedily starve to death. Preëminently it is the duty of America to feed her allies. To do this there must be conservation as well as increased production. The two go hand in hand as glorious partners in the happy enterprise of keeping the food following the flag.

Every jar of food that is put up adds that much to the common store. Without the assistance that is being rendered by the millions of war gardens of the United States this supply would be rapidly depleted. The commercial food supplies of the nation have to be supplemented from the back yards and the vacant lots which have been turned from their barren, uncultivated state into bounteous yielders of food.

There should be no limit to the amount of

food which the American housewife puts up for future use. She should can all she possibly can, even if it is in excess of the amount which her own family probably will need. There may be others in the neighborhood who are not so fortunate as she, who for one reason or another have not been able to cultivate a war garden. Part of her surplus canned or dried vegetables can be given, or sold at a fair price, to friends or acquaintances who will be glad to have them.

The ease with which home canning and drying can be done makes it a simple matter for any housekeeper to add her bit in this way to whatever other services she is performing for the country. No elaborate outfit is required to preserve or to dry vegetables; and on this account no one can offer any excuse for not helping in this manner to conserve the nation's food resources.

NOR can any one hide behind that other excuse which is sometimes given: "What I can do would be so small a contribution that it is not worth while." To give such an excuse at this time would be nothing more than the furnishing of "aid and comfort to the enemy." It is only by the sum total of the small amounts that the vast aggregates which are collected to-day are arrived at. While this is a day of big things, it is still the day of small things; and the "baby bonds", pennies collected at moving picture houses, and dollars which go to make up the hundreds of millions that are donated to the Red Cross, Y.M.C.A. and other worthy purposes, are evidence of the power of "tiny drops" which swell into a mighty ocean.

The necessity for home canning will increase with every added day of the struggle. All the able-bodied farmers of the embattled nations of Europe are in the trenches or serving in the army elsewhere; and the farmers' sons and helpers in the United States are joining the ranks by the hundreds of thousands. Old men, women, and children are doing the farming in Europe. Yearly the crops are decreasing. And as the production of our allies decreases, the demands upon the food stocks of the United States increases. Hence we must supplement our commercial stores of food more and more with home canned and dried products.

IT IS to the women of America that the nation looks for this patriotic service. It is they alone who can render this vital aid. There is no work they can turn their hand to which will be of greater assistance in helping to win the war. The National War Garden Commission sends this message to all the women of America: See to it that the war gardens which have been planted all over the United States are made to do their full duty. Now that they are growing the food, do not allow any of it to go to waste. Can it, dry it, preserve it, and store it away for future use, in order that it may win the war.

EDITORIAL NOTE:—The National War Garden Commission, Washington, will send to any one free upon request, a copy of its illustrated booklet on "Home Canning and Drying of Vegetables and Fruits." It contains clear, concise and complete directions for making jellies, fruit butters and various products of fermentation, and salting and pickling processes.

THE PATRIOTIC GARDEN

FOOD F·O·B THE

He also Fights who

EAT·FRUIT·AND·SAVE·SUGAR

KITCHEN DOOR

helps a Fighter Fight
H·HOOVER

EAT·NUTS·AND·SAVE·FAT

Planting for Canning Needs F. F. ROCKWELL

Putting the War Garden on a Definite Production Plan to Fill the Pantry for Winter

WE EAT what we can, and what we can't we can,"—is *not* the proper basis on which to plan a winter's supply of vegetables.

So much has been said, about saving surplus garden products for winter, that many persons are in danger of being led to the idea that the mere *prevention of waste* should be the principle object in preparing food for winter use. That is getting the "cart before the horse," and—like so many other "makeshift remedies"—tends to aggravate rather than to help the situation it is supposed to cure. If people get the idea that they may can or dehydrate any part of the crop which happens to be left over, they will naturally become careless about planting the exact amount required to supply their summer needs. Every home gardener and every war gardener, therefore, who proposes to help support himself and his family during the winter as well as during the summer, should, first of all, get the viewpoint straight.

It is just as important to plant a garden for winter as for summer.

GROWING vegetables for winter is just as important as growing them for summer. Depending upon "surplus products" from the summer garden for the winter supply is wholly inadequate and always very unsatisfactory.

When growing vegetables for summer use, the object is to have them of as many varieties as possible and in small quantities at a time, so that the season for each will be prolonged and the vegetables, when used, will be in the best table condition. For putting up vegetables for the winter, however, it is of advantage to have them *all ready for gathering at one time*, when they can be most conveniently handled. For canning it is preferable to have them when the weather is not too hot. In most cases, this will be in early fall. For dehydrating, they should be ready a little earlier as they will dry out more quickly before the weather begins to get cool. For winter storage crops must be planned to mature two weeks before those needed for latest table use, so that they will not be over-grown before being ready for storage—which cannot be done, of course, before cold weather is just setting in.

OBVIOUSLY, if one depends upon usual summer surpluses for the winter supply, it will be impossible to meet the above conditions. Small quantities only will be avail-

Three Ways War Gardens Help

PREACH and practice war gardens. The effect of war gardens in providing food, saving labor and relieving the railroads cannot be over-estimated. Three of the important factors in this war are FOOD, LABOR and TRANSPORTATION. The war garden helps solve all three.

Dr. Alonzo E. Taylor of the Food Administration, speaking from accurate knowledge, declares, "It is no exaggeration to say that the war gardens in Europe have in the case of Germany, for instance, pulled her through two summers and that she would probably not have been able to pull through if it had not been for her war gardens. In the largest cities of Germany, as much as 25 or 30 per cent. of the food consumption of those people during those months was fresh vegetables, largely relieving the cereal situation."

able at a time; and likely enough they will be ready at times when it is inconvenient to take care of them; moreover they will not be uniform in maturity nor in the very best condition for table use.

What Can be Saved for Winter

OF COURSE, the number of vegetables to be planted in the garden planned especially for winter will be somewhat fewer than the full list grown in the complete garden for summer. Nevertheless, the range is much wider than ordinarily realized.

Before giving too much thought to *how many* different things can be saved, however, the beginner should learn to realize fully the importance of the different factors or conditions which effect the success of saving food for winter. Apart from the inherent keeping qualities of the different vegetables there is the important matter of the condition of the product which is to be put up.

Growing food for winter is a distinctly different proposition from growing vegetables for the summer supply.

Get the Raw Materials Right

FIRST of all, every vegetable used for either canning, dehydrating, or storing should be in *perfect* condition—better condition really than you can expect to get from your summer garden, because the entire crop can be taken at one time, at its prime, instead of being used a little at a time, as has to be done with summer crops.

Neglect in getting the crops in just the right condition probably causes more loss and trouble in saving vegetables for winter use than any other one thing. For thoroughly satisfactory results it is necessary not only to have products which are absolutely free from decay, but to have them at just the right stage of development or ripeness. A great deal of the prejudice against canned vegetables and fruit in the past has been due to the fact that the usual source of raw materials was "surpluses" from the garden, which were not made use of for canning or for drying until they had passed their prime table quality.

Over mature vegetables, even if perfectly sound, are not satisfactory for canning because most vegetables undergo a decided change in texture as they reach maturity and become fibrous or pithy, which makes them not only poor in quality but greatly increases the work of preparing them for canning or for drying and, incidentally, the ultimate work of cooking.

PLANTING TABLE FOR VEGETABLES FOR WINTER USE

DATES TO SOW TO HAVE PRODUCT IN GOOD CONDITION, AND READY WHEN CANNING OR DEHYDRATING CAN BE DONE BEST

VEGETABLE	FOR DRYING	FOR CANNING	FOR STORING (DRY)
Beans bush . .	May 15—July 1	May 15—Aug. 1	May 15—June 15
" lima . .	May 15—June 15	May 15—June 15	May 15—June 15
" pole . .	May 15—June 15	May 15—June 15	May 15—June 15
Beets . .	April 15—July 1	Apr. 15—July 15	June 15—July 1
Brussels Sprouts	Apr. 1—May 15	Apr. 1—June 15	June 1—July 1
Cabbage . .	Apr. 1—June 1	Apr. 1—June 15	June 15—Aug. 1
Carrot . .	Apr. 15—June 1	Apr. 15—July 1	June 1—15
Cauliflower . .	Apr. 10—June 1	Apr. 10—July 10	June 15—July 20
Celery . .	Apr. 15—May 15	May 1—July 1	May 15—July 15
Corn . .	May 1—June 15		
Greens . .			
Chard . .	Apr. 1—June 1	Apr. 1—July 1	
Spinach . .	Apr. 15—July 1-10	Apr. 1—15—July 1-Aug. 15	
Beets, small	Apr. 15—June 1	Apr. 15—Aug. 1	
Mustard . .	Apr. 1—May 1-July 1	Apr. 1—15—July 1-Aug. 15	
Okra . .	June 1	June 1	
Onions . .	Apr. 1—May 15		Apr. 1—15
Parsnips . .	Apr. 1—15		May 15—June 1
Peas . .	April 15—May 15	Apr. 15—June 1—July 15-Aug. 15	
Peppers . .	May 15—June 15	May 15—June 15	
Salsify . .	Apr. 1—May 15		May 15—June 1
Squash . .	May 15—June 15	May 15—July 10	May 15—July 1
Tomato . .	May 15—June 15	May 15—July 15	June 15—July 15
Turnip . .	Apr. 1—May 15	June 15—Aug. 1	



War Garden of one patriotic citizen, Mr. E. S. Burke, of Cleveland, O., occupying the erstwhile flower beds on the front lawn. The vegetables were used as ornamental plants, and effectively so

Products Should Be "Strictly Fresh"

ANOTHER factor which makes for success in saving for winter is to have all the products as freshly gathered as possible. Vegetables which have been allowed to wilt are more difficult to keep successfully and are not as good a quality as those which are absolutely fresh from the garden. The importance of this is often not realized.

Planning for the Winter Tables.

MUCH of the same ground can be used a second time for the winter crops; but they should be put in specifically for winter use, and so timed that they will be ready when they can best be utilized. The best dates for planting may be found by referring to the planting table on the preceding page. In the following paragraphs there are suggestions as to when the different vegetables should be used and just what varieties to grow for winter.

BEANS:—Easily saved in the dried state by storing, or by canning or dehydrating. The snap or butter varieties can be had at any time during summer up to frost. If wanted dry plant rather early. Stringless Green Pod, Brittle Wax or similar types are good for either drying or storing—or, if space is limited, Kentucky Wonder, Meccaslan or other pole varieties may be used if gathered when young and tender. For use dry, Kidney, Navy and "Boston pea" Beans and Dwarf Horticultural and bush limas are the bush sorts; while Horticultural Case Knife and the Limas may be grown on poles. The surplus of the early varieties should be picked and carefully dried, as most of them can be kept for winter use or to supply seed for the following season.

BEETS:—Beets for winter should always be grown especially as a late planting if wanted for storing; early sowings get too old and tough. Beets for canning and drying should be used while very young and tender. This may seem wasteful at first sight, but it is not. The ground will be occupied for less time, a greater number of plants can be had to the foot of row, there will be less waste in preparation. Dark Red Ball and Detroit Dark Red are superior sorts for winter use.

BRUSSELS SPROUTS:—One of the easiest of all vegetables to grow for winter as it merely has to be left in the open and gathered as wanted up to the mid-winter holidays.

CABBAGE:—While one of the regular "winter" vegetables cabbage cannot be grown as profitably in the home garden as many other things since it is usually obtainable in the markets at reasonable prices and is of good quality. Any surplus cabbage,

can be saved by dehydrating. If there is room, make a special planting for winter of some good keeping sort such as Copenhagen Market, Flat Dutch or Danish Balthead—the latter while being the hardest heading does not mature as readily in some sections as the Flat Dutch. For extra fine quality, grow Savoy or Wrinkled; this is especially good for dehydrating. Cabbage plants started in June in the seed bed, may be set out amongst other maturing crops in late August.

CARROTS:—While always obtainable in the markets, it is hard to get them small enough for canning to be of good quality. They are easily kept by dehydrating. For winter, make a special planting of Danvers Half Long, New Amsterdam or Coreless. Sow late enough so that the roots will just reach good table size by freezing weather.

GREENS:—Under this heading is included such things as spinach, beet tops, Swiss chard, kale, Chinese cabbage and so forth. All of these may easily be canned or dehydrated. Surpluses from the garden may be saved by the latter method during the summer and a specially late planting made for canning to mature just about freezing weather.

OKRA:—May be either canned or dehydrated or simply dried—in the latter case, the pods are simply strung on a line. The regular summer planting will furnish plenty for putting up for winter.

ONIONS:—The tender white varieties which do not keep well in a fresh state may be saved by dehydrating. A planting now will give small, tender onions for pickling.

PARSNIPS:—Parsnips almost invariably are planted too early for best quality for winter keeping. There is still plenty of time. They are one of the easiest vegetables to grow and so hardy that they can be left in the ground over winter although part of the crops should be taken up and put in a trench or in the cellar to be used during midwinter, when they cannot be readily gotten at out of doors.

PEAS:—Planted in late July or in early August will give a fall crop. Surpluses from the summer crops already sown may be used, but do not expect a good quality of product from peas that have been allowed to get tough and hard on the vines. British Wonder, Blue Bantam and Laxtonian are fine quality dwarf sorts, while Gradus, Thomas Laxton and Alderman are among the best of the tall growing varieties for late use.

PEPPERS:—Make a second planting to furnish fruits late in the fall.

POTATOES:—While potatoes are, of course, ordinarily kept by storing, they are easy to dehydrate. While both the Irish and Sweet potatoes are usually planted quite early in the spring, the tubers from late planted crops while not so large will be of better keeping quality than those which have fully matured. The Irish potatoes (early varieties, of course) may be put in as late as the first week in July and will make a good crop under favorable conditions.

SALSIFY OR OYSTER PLANT is similar to the parsnip in its habits of growth and in its facility to withstand freezing weather without injury. Make a generous planting now for roots of the finest quality for winter and next spring.

SPINACH:—A July or early August sowing will produce a supply in time to be canned before freezing weather in the fall. It can also be dehydrated very readily. All Seasons and Victoria are good varieties for late sowing.

SQUASH:—While the bush sorts require a great deal of room, there are a number of dwarfs which produce heavily in propor-

tion to the amount of space they occupy such as Fordhook and Delicata. As they are quite "early" varieties, they may be sown for several weeks yet to give a fall supply.

TOMATOES:—It often happens that the early planted crops get through yielding before fall. To be sure of having enough for pickles and for canning, make a second planting at about this time. Chalks Jewel, Matchless, Stone or Coreless will make a good variety for a second planting.

TURNIPS require but a short time to mature a crop, so that they may be planted after most spring and summer vegetables and still have time to mature. Turnips are excellent winter keepers, and where there is storage room, that is the simplest way to save a crop. They can, however, be either canned (use only quite young ones, of course) or dehydrated. The regular varieties of turnips grow so rapidly that special care must be taken to get them while they are still small and tender. It is better to delay sowing until about midsummer and then to use a medium sized variety of excellent table quality, such as Amber Globe, Strap Leaf, or White Egg.

The New Garden Song

J. L. DAVIS, Kentucky

(Written to the tune of "Over There")

Johnnie get your hoe, get your hoe, get your hoe;

Mary dig your row, dig your row, dig your row;
Down to business girls and boys;

Learn to know the gardener's joys!

Uncle Sam's in need, pull the weed, plant the seed;

While the sunbeams lurk do not shirk,
Get to work.

All the lads must spade the ground,
All the girls must hustle round.

CHORUS

Over there, over there!

Send the word, send the word over there—
That the lads are hoeing, the lads are hoeing,
The girls are showing ev'rywhere,
Each a garden to prepare,
Do your bit so that we can all share
With the boys, with the boys, the brave boys,
Who will not come back 'til it's over, over there!

June Action In the War Garden A. KRUHM

Preparing for an Advance Guard of the Late Season Crops—Where Luxury Is Actually an Economy Also

JUNE deserves the name of the “ideal month” for garden making. Cool nights are a memory; and *anything*, even the tenderest vegetables, will thrive, yes, will *hasten* to make good growth in order to attain maturity before the early frosts which in northern sections are but 100 days away. There are three well defined lines of activity in our present campaign.

1. By persistent cultivation and timely watering urge to rapid maturity the extra early sowings of hardy vegetables.

2. Meet promptly the seasonal attacks of bugs, blights, and fungous diseases which cause the gardeners and farmers of this country to lose about 700 million dollars' worth of crops every year! Take the invaders seriously and repel in full all assaults as soon as recognized.

3. Establish reserve supplies of hot weather crops by making sowings of only such types and classes as will endure the hot weather which is sure to come during July and August.

DON'T sow now any of the extra early varieties of vegetables with which you started your April garden, because none of them are adapted for the midsummer garden. This basic fact is often ignored. For illustration, during April you sowed Curled Simpson, May King, or Wayahead lettuce, all of which do well enough during the cool spring months, the last two furnishing splendid heads this month from seeds sown early in April. But to sow seeds of those same varieties during June would be a waste of time, of labor, and of seeds, because the plants would “bolt” over-night in July just about the time they begin to develop fairly.

ON THE OTHER HAND, there is hardly a class of vegetables of which you may not sow seeds during this month with the perfect assurance of gathering crops before frost; it is only necessary to exercise some care in the selection of types and varieties suitable for the season during which they are to mature.

IF BY any chance your garden is only to be begun in June, do not despair; nay, rather rejoice that there is such splendid opportunity to do so much—provided, of course, that the soil is reasonably good and mellow. Sowings can be made for the new garden as follows: Beans, June 15, July 1, 15. Beets, June 10, 25, July 5, 15, 25. Cabbage, use plants from seed sown about May 15. Carrot, June 10, 15, July 5, 15. Corn, (early) June 15, 25, July 5, 15. Cucumber, June 10, 25. Endive, June 10, 25. Kohlrabi, June 10, 25, July 5, 15. Lettuce, June 10, 15. Parsnip, June 10. Radish, June 15, 25. Salsify, June 5. Squash, June 5. Turnip, June 25. Rutabaga, June 25. Tomatoes, at once, using well started plants.

IT is well to remember that some vegetables have absolutely no toleration for warm weather and planting them is waste. Peas and spinach will *not* thrive during July or August; neither will cress, endive, mustard nor turnips. As a broad rule, cool season crops should not be sown in June, excepting where especially heat resisting varieties are available or substitutes may be pressed into service.

WHEN IT comes to substitutes, I have often wondered why home gardeners do not appre-

ciate Swiss chard as the practical alternative of spinach. Kohlrabi has a flavor far superior to that of the bitter midsummer turnips, being tender and mild in flavor all the time. There is no substitute for peas. But New Zealand spinach makes far better “greens” than either cress or mustard.

HEAT RESISTING sorts of cool season crops are available among lettuces and radishes. As a general rule, all black-seeded varieties of lettuce resist hot weather better than the white-seeded kinds. All radishes requiring 60 days or more to reach good size are proof against midsummer heat, but you'll find their skin so thick you can *peel* it off—and herein lies the reason for their heat resistance!

VEGETABLES that simply *revel* in summer



Indeed they also fight who stay at home and plant. Here is the national opportunity of every home gardener

heat are: beans, cucumbers, sweet corn, eggplants, melons, okra, pepper, pumpkins, squashes, and tomatoes. Among these the following are *least* affected by drought: beans, eggplants, okra, pepper and tomatoes.

Those that need plenty of moisture to do well are corn, cucumbers, melons, pumpkins and squashes. None of them, however, should have the water applied to the vines or plants. This often washes away the pollen needed to effect proper fertilization of flowers before fruit can “set.”

COOL SEASON crops that are not particular as to either heat or moisture and that thrive well throughout the summer from seeds sown in June are carrots, beets, parsnips, and salsify; all splendid root crops for use during fall or winter.

BECAUSE THE SOIL is apt to be dry to a depth of several inches in sections enjoying little rainfall during June, all seeds should be sown

deeper and care should be taken to press the soil into firm contact with the seeds, when covering them. Where watering is resorted to, be sure to put the moisture *under the seeds*, in the row, *before* sowing. It does no good to sprinkle the top of ground, *after* sowing.

THIS IS the month to make *each square foot* of ground in the garden yield *extra dividends* by intensive utilization of space between the rows and plants. For illustration, tomato plants set out late in May or early this month will not begin to “spread” until July. Even then, spreading of vines should be prevented by providing supports of some sort up to the middle of July. Lettuce, radishes, and other quickly maturing crops of heat resisting varieties may be grown between tomatoes, peppers, eggplants, etc.

FOND OF PICKLES? This is the month to make extra sowings of cucumbers of the Boston Pickling variety to put up for winter use. The plants and fruits develop very quickly at this season, especially if occasionally liquid manure is applied to the hills, to stimulate growth of vines. By pinching out the centre of shoots, cucumber vines can be restricted to surprisingly limited space without seriously limiting the number of fruits set.

WHILE WE speak of “putting up” things remember that *everything maturing early in the season* is far superior for canning than crops maturing later. Now, I can just see a goodly number of readers throw up their hands, exclaiming: “But we want to enjoy these nice, fresh vegetables right now.” Alright! Go ahead! But don't waste a single thing, because: the earliest vegetables are the tenderest since they have all the advantages of seasonable weather, plus newly reinforced soil fertility to draw on. The result is quick development and a tender quality that cannot be duplicated later in the season when slower growth, greater heat and reduced fertility put more fibre and less flavor into all the vegetables.

BEANS maturing during August and September require three hours of cooking to prepare them for the table, while the same quantity of the same variety requires but two hours of cooking during July. August heat and cool nights during September simply equip the pods with so much more fibre that has to be broken down by cooking to make the pods palatable.

THOSE who take seriously the matter of canning vegetables for winter use should study the adaptability of the different kinds and varieties to the different makes of jars available. Do you know, for instance, that a quart can of the E-Z Seal kind will nicely hold just six ears of Golden Bantam corn? A pint can of the same make will hold two dozen four-inch Chantenay carrots without a cubic inch of wasted space. These are just examples that have come under my own observation. The point to watch is to get the sort of equipment that will most economically serve the needs of the individual, depending on the likes or dislikes of the family for certain vegetables.

First Fruits of Victory M. G. KAINS

Stocking the Commissariat Department

DESTROY that great army of camp followers that fall upon the strawberry bed after harvest. The best way is to dig or plow up the bed that has borne only one full crop, relying upon a new bed for next year's supply. The next best plan is to do this same thing after the second crop has been gathered. In this case, however, it is good practice to run the hay mower or the lawn mower (the latter set to cut rather high) over the plants so as to clip off all the leaves. If the ground is dry, rake off these leaves and the mulch and burn them, clean the bed of weeds, cultivate between the rows and keep as free of weeds as in the first year. If the ground is moist, loosen the mulch and let dry a day or two, then set fire to it on the windward side and burn up both leaves and mulch. The patch will look bleak for a week or two but the new growth of leaves that comes soon after will be clean and beautiful. If the patch is large, plow a shallow furrow on each side of the row, fill with rotted manure and cultivate the earth back to cover the manure. Keep the area clean of weeds for the balance of the season.

For best results with everbearing strawberries, keep the blossoms pinched off until about July first. Thus the strength of the plants will be directed to fruit formation during the later summer and fall months when strawberries are highly acceptable.

"Water! Water!! Water!!!" cry the ripening berries. The strawberry, the gooseberry and the blackberry call for 90 per cent. or more, the currant and the grape for 85, and the raspberry for 80. How shall we supply it? By irrigation! The several pipe line systems will easily meet the demand. But it's almost as easy to do where no such system is available. Conservation of water is the plan. First, reduce the number of fruiting stems—three or four to the hill will produce choicer fruit than a larger number. Second, prevent the loss of moisture, either by cultivating the soil shallow every ten days or two weeks, or by maintaining a deep mulch of straw, leaves or litter; thus making the moisture in the soil reach the air via the plant and the fruit.

"The June Drop"

NATURE is a strict recruiting officer. She positively will not accept any fruit that lacks what she considers essential qualifications. Still further, she as positively refuses to muster in a larger army than she can equip and support in the field during the season's campaign. Hence, her ruthless rejection of countless volunteers as shown by the windfalls on the ground beneath fruit trees this month. These fruits are not slackers. They are either imperfect or the available food supply is inadequate to nourish

both them and the fruits still on the tree. Hence, nature sloughs off these fruits and we call the process, "the June drop." It is perfectly natural and must be expected and recognized as necessary from the tree's standpoint. Were it not for this we would have no fine fruit because the specimens might be so numerous that they would become scarcely more than skin and seeds. The fact is, nature is often not quite vigorous enough in her rejections to suit us; hence we must thin out the specimens as will be explained next month.

IRRIGATE your garden with a rake or a cultivator, unless you have a so-called irrigation system. These implements save the moisture actually in the soil by maintaining a "dust blanket"



The extra hour of daylight means

Great increase of power for the home and back yard munition plants.

More intensive cultivation.

Adds 300,000 years to actual working time in war gardens.

Gives a million war gardeners an extra 24,750,000 eight-hour days in the working summer season.

through which water passes much more slowly than through a baked and crusty surface. They are also admirable for use in the same way in conjunction with an irrigation system, provided they are never worked when the soil is wet enough to puddle and bake in the form of clods.

Conserving the Fruits of Victory

WHEN are fruits of age for enlistment for conservation service? That will depend somewhat upon the nature of the service. For jelly, always gather them a little immature because they then contain a larger proportion of pectins upon which successful jelly-making depends. To be sure, if allowed to become fully ripe, less sugar may be required but it will almost always be necessary to add gelatin to make them "jell." Another disadvantage is that fully ripe fruit makes a "flatter" jelly than does fruit slightly immature, because the acids and volatile oils upon which flavor depends are more or less lost in the process of cooking, especially if the fruit is boiled instead of simmered as it should be. The riper the fruit, the lower should be the heat and the slower should be the simmering in order to avoid losses of flavor. If fruit becomes too ripe for jelly, therefore, use it for jam (or even better for "bottling") because it will lose less of its flavor when thus prepared. But best of all, never let it get over ripe. If it threatens ripening faster than it can be used raw, or for jelly, make allies of the neighbors to speed up the conservation campaign. Fruit is ammunition; don't let it waste!

IF YOU have several varieties of currants—early, midseason and late—extend the season still longer by covering some of the

late bushes with cheese cloth about the time the fruit is beginning to color. This causes it to ripen and pass beyond the edible stage more slowly. It is possible thus to lengthen the season well into August and even September!

THIS year, if never before, allow some of the gooseberries to become fully ripe before gathering them. They will thus become "fit to eat" raw. Moreover, they make a far finer flavored jam than do the green-as-grass gooseberries gathered in the usual way.

Reserves and Preserves

WHILE the strawberries are ripening, note and label those plants that bear the most fruit, then select suckers from these to form the plantation for next year. Some horticulturists say it makes no difference what kind of plants are parents of the new generation because, as one of them claims, productiveness is due to the nurture not the nature of the plant. It seems to stand to reason, however (and instances are not lacking to support it), that plants selected as suggested are more likely to be more highly productive than those taken "hit or miss." One of my friends more than doubled production in four or five years by this method of selection. Every one of his plants is now loaded with fruit each year.

Potted strawberry plants are easy to grow. Just plunge 3-in. pots rim deep in the soil of the strawberry bed where the runners may be placed over them. Fill them with good soil and put a pebble or a small clod of earth to hold each runner in place until rooted well. In two to three weeks the plants will be ready to set in the new bed. Cut them loose from the parents, knock them out of the pots, and plant, but no deeper than the crowns. Water if necessary. This work and transplanting may be done any time during July, August or September. Such plants should yield fair returns of fruit next year and reach full bearing the summer after.

ONE of the best of mulches is made from lawn clippings. If you haven't chickens to eat this tender green stuff, don't waste it by putting in the compost pile or throwing it away. Place it between strawberry plants. After these have been mulched as much as necessary put it around raspberries, blackberries, currants and gooseberries, or among vegetables that cannot be conveniently hoed or wheelhoed, in the latter cases it will naturally be plowed under later in the season or next spring and thus add to the humus content of the soil.

Foemen worthy of your steel, or rather bugs and blights worthy of your spraying apparatus were discussed in the July issue of last year and the May issue of 1918.

CONSERVATION OF MOISTURE

The most important work of this month is conservation of water. Stirring the soil with the cultivator and garden rake and mulching it with lawn clippings are the surest ways of saving the moisture already in the ground. Overhead irrigation insures an ample reserve supply for time of need.

When wet weather makes strawberries too soft or sandy for the table they are still useful for making "strawberry acid," a thick syrup which mixed with water, ice and perhaps spearmint makes a cooling summer drink. They may also be made into "juice" or wine of a quality surpassing certain Teutonic beverages that are taboo in many parts of the country. At any rate there's no reason why they should be wasted.

[Under this heading THE GARDEN MAGAZINE will give its readers every month a brief account of "what's doing" in the varied and highly interesting group activities in garden and farm-work, stimulated, or brought into being by the emergency of war and a threatened food shortage. Giving out food for the household is the age-old duty of women. That to-day, this duty involves producing the food as well, makes no difference in the zeal for the task. The American woman is meeting the situation splendidly, with courage and intelligence and devotion.]

* * *

MARY, get your hoe, get your hoe" sung to the catching tune of "Over There" is a sort of slogan of the California school girls. In fact the California women are so hard at work a-gardening that one can feel the infection of their zeal over here in the slower and more conservative East.

The gardening is on all scales from that of Mrs. Mansfeldt of San Francisco who has ripped the geraniums from her studio window boxes and planted instead humble radishes and onions and carrots, thus setting a fashion in window-boxes which has been taken up not only in San Francisco, but in Cherry Street, New York, to the fine organization of the Land Army work in California under the capable leadership of Mrs. Myrtle Shepard Francis. Mrs. Francis is no amateur, but the president of a large and successful seed-growing firm of Ventura, and so when she began touring the state and promising to meet the labor shortage—serious and in many cases disastrous, last season, the farmers and fruit-growers listened with respect. Instead of the distrust with which many Eastern farmers met the idea of women workers, the fruit-growers of California were charmed.

* * *

California, last year, had a demonstration of the sincerity of purpose and the value of women's work. When the labor shortage sorely threatened the existence of the coöperative cannery at Hemet, the Women's Club of the little city went in a body to the rescue, toiled faithfully at the unaccustomed work and saved the fruit crop of the valley. Southern California believes strongly in the competence of woman's labor and 1,500 workers are wanted on the Southern California fruit farms. Assured of labor in harvesting, California farmers are enlarging their plans, and thousands of acres which otherwise would remain untilled have been put under cultivation.

* * *

An extremely promising Training Farm at Libertyville, Illinois, is the chief undertaking of the Illinois Branch of the Woman's Land Army of America. The use of 200 acres, rent free, was the gift of Mr. W. V. B. Ames. The Training Farm offers to 40 women a thorough course in diversified farming under excellent instruction. Although many girls can be found for short time labor, the lack of thoroughly trained women farmers is serious, and the time and money spent in training these women will be an insurance of thorough work to come. Each one will be equipped theoretically, thoroughly, and practically to organize and train a woman's farm unit next summer. Enrollment requirements are—(1) Promise to use training for the patriotic aims of the organization, (2) enrollment until the end of October, (3) rigid physical examination, (4) two weeks probationary period.

The Chairman is Mrs. Tiffany Blake. The

UNCLE SAM'S GARDENING

Chicago address is Room 608, 112 West Adams; and the farm address, Libertyville, Illinois.

* * *

The National Headquarters of the Woman's Land Army has moved from 32 Fifth Avenue to 19 West 44th Street. Here one should send for pamphlets, for information on organization, and the like. The Units vary in size from four or six to seventy, and are composed of untrained women, willing and physically able to work. A chaperon housekeeper accompanies the Unit, and the girls are paid by the day or by the piece. The matter of food and lodging is arranged for by the Unit; where necessary, a Captain—a trained woman supervisor—is in charge. This is the plan, now very familiar, which last summer was proved practical and farmers who last summer employed the women Units are glad to have such help this summer. Last summer the largest New York unit was the now famous Mt. Kisco Unit. The Women's Agricultural Camp at Bedford, N. Y., as it is more properly called, is under the direction of Dean Ogilvie of Barnard. It was founded by Mrs. Charles W. Short, Jr. Inquiries about its work should be sent to Dean Ida O. Ogilvie, Bedford, N. Y.

Although men workers view with alarm and dislike the entrance of women into industries hitherto sacred to men, fearing, perhaps reasonably, that it will mean a lowering of wage standard and a possible loss of jobs, they have no such feeling about the farm labour. The Woman's Land Army may enlist all the recruits it likes, and the vanishing race of Hired Man will only give them its blessing. He seems to feel no more jealousy and animosity here than women would feel should men suddenly, from patriotic motives, turn to general housework, and organize squads to do housework by blocks. The theory of the Land Army since food production is the end, is that it is more practical to supply labor to the farmer who needs it and who knows how to farm than to start farming experiments with untried workers on new land. Hence the Units are placed at the disposal of any farmers who need them.

New York units are at Southold, Bridgehampton, and Westbury, Cold Spring Harbor, Port Washington, Rockville Centre, and St. James—all Long Island, and the Bedford Unit at Mr. Kisco. Jersey Units are at Short Hills, Spring Lake, and Summit, where The Union County Farm Camp has just been formed. Camp Director, Miss Mabel Benton; Miss Beatrice Malcolm of Summit is in charge of the motor corps.

* * *

Extremely competent work for individual gardens is being done by the Philadelphia Society of Little Gardens—done with the clear-headedness and definiteness characteristic of that excellently managed organization. It has new branches in many states and has undertaken the work of replanting the orchards around Villequier-Aumont, France. Other Garden Associations should take notice of the Committee for the Collection and Distribution of Surplus Produce, which offers picking, free of charge, surplus fruit and vegetables along the Main Line. Mrs. Andrew Wright Crawford, Bryn Mawr, Pa., is Chairman of this Committee. Mrs. Cornelius Stevenson is the president of the Association and the Secretary is Mrs. Charles Davis Clark, 2215 Spruce Street, Philadelphia.

It would be hard to find a better organized community than that of the Borough of Queens, under the leadership of Mrs. John W. Paris of

Flushing, nor better work than that done by the Queens Borough War Garden League. Their methods have been very direct, and beautifully free from red tape or over-organization. An advertisement in the local papers brought next day a hundred offers of unused land, another advertisement brought more than 500 requests for the use of land for gardening. The League made arrangements to have plowing done for whoever needed it. Committees were organized at Far Rockaway, Rockaway Beach, Ridgewood, Elmhurst, Jamaica, and Flushing, the chief business of the Committee being to see that the individual garden enterprises don't go wrong. Any one who wants to make a garden, whether it is a lone enthusiast or 200 girls from the Washington Irving High School, asks Mrs. Paris to find the garden. The office of the League is in the Park Commissioner's Office, Forest Hills, Queens Borough, N. Y. The Park Commissioner, Albert Benninger, has set a notable example and we trust that other Park Commissioners will follow in his train. He set the Park greenhouses to work and had ready a million vegetable plants which home gardeners could have for the asking. He has also 2 acres of castor oil bean for the Government.

* * *

Aside from this work, the Queensboro War Garden League has had time to set another example and planted a huge "perennial Christmas tree," so that hereafter every year the community tree may be decked at Christmas time and greet the spring none the worse for its joyous experience instead of the community each year demanding the sacrifice of a beautiful spruce for the yearly festival. This League is also supervising three Girl Pioneer Gardens and has assisted with the school gardens.

* * *

The number of young folk who have gone a-gardening for Uncle Sam is enormous. In Utah between 16,000 and 18,000 boys and girls are enrolled for farm work and this enrollment is not exceptional, it's typical. The Camp Fire Girls last year to the number of 70,448 made truck gardens; this year's figures are not yet in, but there are many more. In Chicago the Camp Fire Girls have for their War Garden the ground comprised in half a city block. One hundred Boy Scouts of Phoenix, Arizona, have engaged a farm of 25 acres at Wheatfields, some 14 miles from Globe, and a regular summer camp will be set up this month.

* * *

A. L. Spencer has been making a missionary tour from Los Angeles to Minnesota urging business men who were raised on farms to return to the farm, to side-track or deputize their other business and take farms of 150 acres or more and run them for the duration of the war.

* * *

One of the chief points to be cared for now, is that none of this enthusiastic garden-work be wasted, that Garden Clubs cooperate with consumers' leagues, that markets be established where perishable food stuffs may be sold at a fair price. If marketing is not practical, then easily stored root-crops should be planted, arrangements made and counsel taken against the need of winter.

FRANCES DUNCAN

Dry What You Cannot Can E. L. KIRKPATRICK

A Means of Saving the Excess of Certain Perishable Crops that Saves Space, and Containers

WE ARE confronted with a harvest of *perishable* garden produce *larger than that of last season*. To meet the call of the Nation and of the Allies for an increased supply of food products while the war lasts, all produce from the garden must be saved—preserved for future use.

While canning, as during the past season, will have first consideration as a means of saving perishable produce the merits of drying, evaporation, or dehydration, must not be overlooked.

Advantages of Drying

THE drying process (which consists of removing the moisture from produce to such an extent, only, that the produce will keep without deterioration) has the following distinct advantages over canning or other means of preservation.

1. Less storage space is needed, since the bulk of dried products is only $\frac{1}{3}$ to $\frac{1}{5}$ that of the original.
2. Cost of containers is practically done away with, as the dried products can be kept in paper bags, pasteboard cartons or tin boxes.
3. Product is moved conveniently—there being only $\frac{1}{3}$ to $\frac{1}{5}$ of the original bulk and $\frac{1}{5}$ to $\frac{1}{6}$ of the "green" weight to handle.
4. Flavor and quality of dried foods is retained if work is properly done.
5. Little or no apparatus is needed where produce is dried in the home.
6. Less work is required than in canning many products.

Work Rapidly

GOOD quality of the dried product rests largely on rapid progress from start to finish. After cleaning, washing and slicing, or shredding the produce, spread the slices or shreds, at once, on trays and expose them to the proper temperature for drying. Temperature needed will vary with the kind of produce, with depth of loading on the trays, with number of times the produce is turned and with circulation of the air through or over the loaded trays. In general, aim to start the drying at 100 to 110 degrees Fahrenheit, gradually increasing the temperature to 150–170 degrees at the finish. From 1 to $1\frac{1}{2}$ inches will be found a sufficient depth of loading trays. Turning or stirring of the produce every 1 to 3 hours will reduce the time needed and will guard against a sour or discolored product. Excessively high temperatures at any time during the drying process must be avoided. Reheating for a few minutes after the product has been cured, that is, allowed to stand for several days until all heat has passed off and traces of moisture remaining are evenly distributed, is advisable.

Types of Driers

WHAT type of drier?" can be answered most satisfactorily by the individual who makes a brief study of the principle underlying the process. Moisture laden air from produce on one tray should not be compelled to pass upward through that on another tray. Rather, it should be led off to pass upward unobstructed or be driven off

at one side by means of a fan. The simplest drying outfit, then, is one in which the trays of produce are placed on a plane side by side rather than one above another. While this arrangement requires a wider source or range of heat, time will be saved and quality of product will be superior. Several upright home driers are so arranged that the trays, each cut 4 to 6 inches shorter than the cabinet,



Julienne mixture for soup. The several ingredients are dried separately and mixed in a handy bowl

are alternated, leaving an air space at opposite ends of each two alternating trays.

Other types have an elevating arrangement whereby all trays above the first may be lowered as the first with its dried product is removed. In many small outfits the operator makes similar shifts by hand.

Working in the Home

SINCE trays may be made of a proper size to fit over a kitchen range, gas plate, hot air register, it will often be most satisfactory to rely upon home made outfits, simple trays. Secure planed strips of wood, $\frac{1}{2}$ or 1 inch by 1 inch in size, and of any desired length. Saw the strips squarely into pieces, making the length of each tray correspond to the width of kitchen range. Keep the width of each tray $\frac{2}{3}$ of its length, for convenience in handling. Nail each set of four strips together securely and cover the frame thus made with a good grade of cheese cloth, stretching and tacking the cloth tightly. Invert the cloth covered frame, and you have a satisfactory drying tray for starting operations in the home. Suspend from the ceiling a rack $1\frac{1}{2}$ to 2 feet above the kitchen range, or support it from the floor or stove in this position. Produce on trays at this height will dry nicely, over an ordinary fire. Where a hard coal fire is banked for the night, lower the trays to within 6 inches of the top of the range. Secure and use an oven thermometer as a safeguard against sudden changes in temperature.

Preparation, Processing and Use of Various Kinds of Produce

Apples. Select sound, well-matured late fall or winter apples, pare, quarter, core and cut in eighths. Or, core pared apples and slice each crosswise in rings $\frac{1}{8}$ to $\frac{3}{8}$ in. thick. Drop the sliced fruit, at once, into a cold salt solution (1 ounce of salt to 1 gallon of water) for 1–2 minutes to prevent discoloration. Take immediately from solution to trays, spreading slices thinly, drain off surplus moisture as quickly as possible, and expose to a temperature of 110°–150°. Dry until slices are tough and leathery, or until a slice when

torn shows no trace of moisture, under pressure. Cure and store in paper bags or cartons.

Before using, soak the dried product 2–6 hours in cold water (1 part apples to 2 parts water), cook slowly until partially done and use as fresh apples in pies, or cook thoroughly, sweeten, and serve as sauce.

Beans. Pick (when vines are dry) tender, green or wax beans before seeds begin to show form through outside of pods. Snip off stem ends, wash beans and cut diagonally in pieces $\frac{1}{2}$ to 1 inch long. Spread $\frac{1}{2}$ to 1 inch deep on trays and dry rapidly at a temperature of 110°–160°.

For use soak beans in cold water (1 part beans to 2 or 3 parts water), add a pinch of soda, cook slowly for $\frac{1}{2}$ hour, drain, add fresh water and a bit of salt pork or bacon and cook until tender. If desired, leave out pork or bacon and serve cooked beans creamed or buttered.

Beets. While beets may be stored conveniently for use in a fresh state, they may be dried satisfactorily to save space or to enable them to be shipped more handily. Select medium size, tender roots, wash, peel, slice $\frac{1}{8}$ to $\frac{1}{4}$ inch thick, spread thinly on trays and dry at a temperature of 110°–150°.

Store dried product away from light in order that its color be retained.

Before using, soak beets 2–3 hours in cold water and cook slowly in same water until tender. Serve as buttered, pickled or Harvard beets.

Carrots. Wash, peel and cut selected roots into cubes or slices $\frac{1}{8}$ to $\frac{1}{4}$ inch thick. Spread on trays and dry at a temperature of 110°–160° until the product shows no traces of moisture or until the slices are tough and leathery.

To use, soak the product in cold water 6–10 hours, change water and cook slowly until tender. (Flavor of strong carrots may be improved by changing water during cooking). Use in stews or serve with white sauce or butter, as fresh carrots.

Celery. Strip celery stalks of diseased or injured parts, wash thoroughly, separate stalks from leaves, shred or cut stalks lengthwise, spread thinly on trays and expose to a temperature of 110°–160° until dry. Dry leaves separately, at 100°–140° of heat and use as a flavoring for soups or stews.

Use the dried product made from the stalks in soup mixtures, or, after soaking in cold water 4–10 hours, cook until tender and serve as buttered or cream celery.

Cabbage. Select well-developed heads, remove loose outer leaves, cut heads through centre, remove cores and slice halves with a kraut cutter or sharp knife. Spread thinly on trays and dry at 100°–145°. Redry for a short time after curing and store in small paraffined pasteboard containers until needed.

Use in soup mixtures, or soak in cold water 2–6 hours, cook slowly and serve as stewed, creamed or buttered cabbage.

Cherries. Remove stems and pits from large selected fruits, and dry in thin layers at a temperature of 100°–150°. (Dry small, sour cherries without removing pits).

For use, soak the dried cherries in water 4–6 hours, cook in same water 10–20 minutes, drain and use as fresh cherries for pies. Or,

cook until tender, sweeten and serve as sauce.

Eggplants. Peel selected "eggs," slice crosswise $\frac{1}{2}$ inch thick and dry in single layers at 100° - 150° . Redry before storing. For use, soak product in water 6-10 hours, cook slowly until almost tender and fry in butter or butter substitutes, or cook until done and serve with onions, scalloped or in white sauce.

Herbs. Gather parsley, mint, sage, thyme or other herbs, wash thoroughly and dry as celery leaves. Crush or powder and use for flavoring soups, stews, or gravies.

Mushrooms. Peel and clean selected mushrooms and dry in single layers, sap side down, at 100° - 130° . Avoid checks during the drying period as mushroom gathers moisture quickly. Dry until brittle and store in moisture proof container, or grind through a coffee or spice mill into a powder, place in well stoppered bottles and keep in a warm dry place.

Soak the dried product in water before using as fresh mushrooms. Use powder or flour for flavoring meat dishes and gravies.

Onions. Remove roots, tops, and outer skins from bulbs, slice crosswise and dry immediately, at 105° - 140° . Redry and store away from light.

Use dried product in soup mixture, or soak in water 6-10 hours, cook until tender and serve as fresh onions, buttered, scalloped, or with white sauce.

Peaches and Plums. Select firm, ripe fruits, halve, remove seeds, quarter halves and dry rapidly in thin layers at a temperature of 100° - 140° . If desired, leave peeling on and dry halves in single layers cut face up.

Prepare and use product as directed for cherries.

Peach or Plum Leather. Wash ripe peaches or plums thoroughly, mash to a pulp, and dry on plates or platters until tough and leathery. Sprinkle with sugar, roll up and tie, if desired.

To use, cut off piece of suitable size, soak in water overnight for pies, tarts or sauce.

Peas. Shell tender, green peas, spread on trays and dry at a temperature of 110° - 140° . Sugar peas, if taken when tender, may be dried pods and all. Wash, cut diagonally and dry as string beans.

Before using, soak peas 2-8 hours in cold water, cook in same water until tender and serve as creamed or buttered peas.

Potatoes. Cook or steam the tubers until nearly done, peel, slice $\frac{1}{8}$ to $\frac{1}{4}$ inch thick or pass through a potato ricer or a meat chopper, and dry on trays, in single layers, at a temperature of 120° - 160° until slices are hard and horny-like. Or, peel and slice tubers, steam for 20 minutes, and dry slices as in the former method.

Soak the product in water 2-8 hours (sufficient water to cover) cook slowly for 5 minutes and prepare as domestic fried, hash-browned or creamed potatoes. Prepare the riced product as mashed potatoes, if desired.

Potato Chips. Peel medium size potatoes and slice $\frac{1}{8}$ thick into cold water. Let stand for $1\frac{1}{2}$ hours, changing water twice. Drain and partially dry between towels, place in hot fat and fry until brown and crisp, keeping slices in motion while frying. Lift out of fat to a paper-lined pan, salt to taste and serve immediately or store in parafined paper cartons until needed for future use.

Pumpkins and Squashes. Cut pumpkins or summer squashes into strips or rings, remove seeds and cut strips in pieces 2 in. long and $\frac{1}{2}$ in. thick. Dry on trays at 100° - 160° , 6-30 hours until pieces are almost brittle. If desired, dry rings by slipping all on a clean cord line, the desired height above the range. Pumpkin dried to a brittle stage and ground through a meat chopper makes a nice flour for pie filling.

Soak dried pumpkin or squash 4-12 hours. (1 part water to 3 or 4 parts squash), cook and serve as stewed or baked squash or as filling in Thanksgiving pies.

Raspberries. Pick berries for drying while they are still firm enough to handle without mashing. After sorting out imperfect berries spread those selected, thinly, on trays and dry at 110° to 145° . Hold temperature below 125° for 2 hours and below 130° for the 2 or 3 hours following, in order that juices will not be lost through dripping. Dry until berries fail to stain the hand under pressure.

Handle blackberries, dewberries, elderberries, huckleberries, loganberries, and strawberries in the same way, provided a similar product is desired.

Soak product in cold water 4-6 hours and use as filling for pies or cook in same water until done and serve as sauce.

Strawberry Leather. Mash thoroughly ripe berries to a pulp and follow directions given for peach leather.

Spinach, Chard, and Beet Greens. Wash any of these crops thoroughly to free them of all particles of sand or soil. Remove tough stems from spinach, strip midribs from chard leaves or slit roots of beets, lengthwise, into halves or quarters. (Do not attempt to dry beets more than $\frac{1}{2}$ in. in diameter for greens.) Drain washed produce as well as possible, place on trays and dry at 100° - 140° . Store carefully to avoid crumpling of the dried leaves.

Soak in cold water (enough to keep product well covered) and cook slowly until done. Add a bit of salt pork or bacon to improve flavor and to give a slightly higher food value. Serve with vinegar as fresh spinach, chard, or beet greens.

Sweet Corn. Select well filled ears of corn while kernels are still in the milk stage or before their outer surface has become glazed in appearance. Immediately after picking, husk, silk, and blanch in boiling water 5-10 minutes. Cut from cobs with a sharp knife, spread $1-1\frac{1}{2}$ inch deep on trays and dry at a temperature of 105° - 150° . To use, soak dried corn in cold water 2-4 hours, cook slowly in same water until done, season and serve as fresh buttered or creamed corn. First class dried corn is superior in flavor and quality to the average canned product.

Sweet Potatoes. Wash, cook or steam, and peel the tubers until nearly done. Prepare and dry as directed with white potatoes. A very fine product will be secured.

Soak dried product in cold water 4-10 hours, cook until tender and serve in any of the usual ways or use as filling for sweet potato pies.

Tomatoes. Wash thoroughly ripe tomatoes, scald in boiling water until skins slip readily, dip in cold water for 2 minutes, pare, core, and cut crosswise into $\frac{1}{4}$ to $\frac{3}{8}$ in. slices. Dry in single layers on cloth bottomed trays at 110° - 145° . When dry remove from cloth with a spatula or dull knife blade.

Use product in soup mixtures or soak in cold water 4-8 hours, cook, season and serve as tomato stew.

Turnips. Wash, peel and slice medium size roots. Dry in thin layers at 110° - 150° until tough and leathery. Unless dried rapidly or bleached with sulphur, turnips make a discolored product useful only in limited quantities as a soup mixture ingredient.

"Julienne," a soup mixture can be readily made up from dried carrots, onions, tomatoes, turnips or cabbage, celery, parsley or other vegetable products. The mixture may contain matured dry peas or beans in varying amounts, if desired. As with fresh vegetable soups, vary the ingredients according to taste and to different products available, taking care



An eighteen pound pumpkin is largely plain water. In preparation for drying 5 lbs. of rind is thrown out. The 12½ lbs. of "meat" yields about $\frac{3}{4}$ lb. dried product and six quarts of water is dissipated. For demonstration this quantity is here shown in the jars

that the nutritive value is kept at or above par. Stir or mix the ingredients well together.

Several brands of homemade Julienne have proven satisfactory. One consists of tomatoes, carrots, cabbage, celery and onions in the proportions of 2, 1, 1, $\frac{1}{2}$, and $\frac{1}{2}$ ounces each respectively. Another contains tomatoes, sweet corn, onions, carrots and celery, 1, 1, $\frac{1}{2}$, $\frac{1}{2}$ and 1 ounce of each. A third contains the same ingredients as the second, along with $\frac{1}{2}$ ounce of pearl barley.

One cup of Julienne, soaked overnight in 4 cups of water, combined with 4 cups of soup

stock and cooked slowly until done, makes 5 generous servings.

Selection of Drying Plant for Community Use

Many food conservation committees or leaders confronted with the task of saving an over supply of produce from home or community gardens will be puzzled with the selection of a satisfactory drying plant. Where such is the case, plan to start operations in a temporary outfit, preferably a chamber fitted with a number of trays for containing the produce and a fan to keep the heated air in circulation. Or, arrange each "plane" of

trays over a set of steam pipes, all in a cabinet of the required dimensions. After mastering the principles of drying in this way, decide what type and size of plant is best adapted to the particular needs of your community.

Drying, evaporation or dehydration is a means of saving an excess of perishable crops in all gardens. Start operations now, that nothing may be wasted. "Process" and use as many first class dried products as possible, since all produce saved will release equivalent amounts of the staple foods as a direct aid in winning the war.

Summer Canning for Winter Serving EFFIE M. ROBINSON

Catching the Crops as they Mature and Preventing Unnecessary Loss—How to Keep Fresh Quality in the Canned Article

EVERYTHING that can be cooked may be canned and everybody who can cook can also can! All foods are scarce in the winter and expensive

to buy. Doesn't it stand to reason that the right and logical thing is to preserve for winter use while there is abundance in summer? Save to the last ounce all the yield of the garden while it is available. Costless material now will be priceless later on.

In those "good old days" when our grandmothers used to "put up" vegetables and fruits the work was done without any of the modern time conveniences. Small attention was paid to the "science" of preserving or canning, and consequently, it was all done, on "chance." It is not yet generally realized that it is perfectly practical to conserve without using quantities of sugar and that everything will "keep" if done the "newfangled" way.

The "Newfangled" Way

THE one tested and found-most-perfect way of canning is called the "One-period Cold-pack Method." It is superior to others, such as the "open-kettle" and the "intermittent," because the food is packed in the jars (before sterilizing), and the covers are closed; the jars never being opened again till wanted for use—so that no air enters after the sterilizing is done. Very acid fruits (tomatoes) can be cold-water sealed without cooking; their acidity preserves them.

Manufacturers offer appliances of various types adapted to the several methods, and it will be found that where any appreciable quantity of canning is to be undertaken it will be an ultimate economy to invest in suitable apparatus, according to requirements. In general these fall into several groups as:

1. *Home-made outfits* depending on individual ingenuity.
2. *Hot water bath outfits* which are systematized developments of the former.
3. *Water seal outfits.* Depending upon double walled baths and water jackets. This gives uniform high temperature with greater ease in operation and control.
4. *Steam pressure outfits* carrying from 5 to 30 pounds of pressure fitted with thermometer, pressure gauge and so forth, and easily regulated so as to definitely maintain any desired temperature. Obviously in community canning kitchens and other cooperative work it is desirable to use highly specialized types of modern apparatus.



Accessory Tools That Help

THERE are besides a number of the little accessories that are quite useful and help to make the work a pleasure and not a burden. For example, the Hold-fast jar lifter, by which you can lift the jars out of the scalding water without being burned; an aluminum funnel for filling small necked bottles; and several kinds of jar openers which save you from many a bruise or cut. If you are using your own copper-bottomed washboiler you can get a wire rack made to fit, with handles so that the jars can be lifted in and out of the water. This is better than any home-made device for

keeping the jars from touching the sides and bottom of the boiler. There is also a small one made for use with individual jars.

[Choosing Your Jars]

MANY of us have jars from last year to be used again, but if buying a new supply get the white glass ones for show purposes but the clear green are perfectly good for home use. Get large mouthed ones as they are easier to fill and to clean. There are several good makes with well-known names, but choose by preference a jar with glass or protected metal top, so that no

How to Get Your Sugar for Canning

AN ADEQUATE distribution of sugar to meet this summer's canning demands has been planned by the Food Administration under a modified certificate system to make sure that home canners may obtain sufficient sugar to preserve perishable fruits. Retail dealers in all states will be provided with certificates which must be signed by the consumers before they obtain the amount of sugar needed for home canning.



Home canning of small quantities can be done by pressing into service the ordinary utensils of the household, but of course special appliances add to convenience. Mrs. F. A. Dibble (New Jersey)

metal can touch the food. Last year's jars must be carefully looked over for notches or cracks, and the covers fitted on properly. Discard defective jars now; it is not wise to take a chance on spoiling the contents.

Use new rubber rings always. When you open a jar, throw away the ring so that you won't be tempted to use it again. Don't ever economize on rings. Always test new ones before using them. A good test is to press the rubber between your thumb and forefinger with a slight pull. If it feels soft and spongy, throw it away, but if springy and "live" it is all right. Before you start the actual work get all your utensils clean—cloths, bowls, spoons, and jars, and new rubber rings. You can then go right ahead with your work without interruption of your own making!

Scientific Principle of Canning

ANY woman can can anything successfully if she will but realize that the object is to kill all bacteria or germs—and that is only done by complete sterilization, or in plainer words, boiling them to death! You have got to give time to kill all the germs, and then you have got to prevent any more getting in, by keeping out the germ-laden air. Better to cook a little too long a time than too short.

The "One-period cold-pack" method of canning is now used almost universally and is the only one worth considering here. It has been thoroughly tested by the United States Department of Agriculture and the National War Garden Commission and found perfect.

This "cold-pack" does not mean canning without cooking, but that the things are packed cold into the jars, the jars closed and cooking done after that.

Steps in Sterilizing

HAVE ALL fruits and vegetables freshly picked or they will be poor in color and flavor, corn and peas especially. The milk in corn dries up very quickly after picking and unless canned at once you might just as well save yourself the trouble involved, and resort to drying.

1. *Grade.* This means to sort out the best specimens of the article to be canned. Don't waste time on bruised or overripe fruits or vegetables. The poor parts of fruit may be used with sugar for jams or butters, but damaged vegetables must be thrown away.

2. *Wash and pick*



Taught by experience, Mrs. John Totterdale, N. Y., successfully puts up all the diversified crops of a complete family garden, using modern appliances to ease the labor and assure success

over your articles, thoroughly. Greens such as cabbages, spinach, chard, etc., should stand for about an hour in salt and water to get the insects out.

3. *Blanch* (unfortunate term having no connection with making white). Means plunge into boiling water and let boil for from two to fifteen minutes; or for greens or highly colored vegetables, put in a colander and steam in live steam for the same time.

4. *Cold Dip.* Plunge immediately into

cold water. The steps of blanching, cold dipping, and subsequent packing must be done as quickly as possible to insure killing the bacteria.

If working alone, only prepare enough for two or three jars at a time. Better do a few jars perfectly, than a whole lot hurriedly.

5. *Fill the jars.* The chilled produce, being now ready for the final handling, is put into the jars whole or sliced, according to circumstances as explained later on. It is understood of course that the jars are ready scalded for use hot, and the rubber rings ready to adjust. Fill the jars with boiling water and add salt—one level teaspoonful for a quart jar. Put on wet rubbers; adjust the bail in bail-top jars, leaving the lower bail or spring open; or screw top on screw-top jars, using your thumb and little finger. This tightens it sufficiently for sterilizing. Sterilize according to time table.

6. *Sterilize.* Fill the sterilizer and set the alarm clock to the time when the operation will be complete. Don't forget that the water may boil away, so have ready a kettle boiling to add water if necessary.

7. *Cool and test.* When the sterilizing is done remove the jars and place on hot cloths. Completely seal. Turn the jars upside down and let them stand still cool. If there are no leaks wrap in brown paper or put in empty jar boxes and store in cool place. Color is retained better in the dark.

Green Leaf Vegetables

These include beet tops, brussels sprouts, cabbages, cauliflower, dandelion greens, endive, kale, spinach, swiss chard, turnip tops, etc. They are canned directly as gathered after washing) and are steamed to blanch, instead of being boiled like the root crops. Boiling kills the color. To steam put the greens in a colander and place it in a tightly closed receptacle, with about an inch of boiling water in it, the water must not touch the greens. I find greens pack better if cut into rather small pieces. Last year when canning swiss chard I divided

the stalks from the leaves and canned them separately. The stalks can be served with melted butter sauce like celery and are delicious.

Green Crops Skinned or Peeled

ASPARAGUS must be washed, scraped and tied in bundles to fit the jars. Blanch (i. e. scald) the tough ends for ten minutes first; then the whole bundle for five minutes more. Pack in jar tips up.

PEAS must not be fully grown. Shell; blanch in steam to keep the color. Do not pack the jars too full as peas are starchy and swell. If the grains swell and break the liquid becomes cloudy. Sterilize, etc.

STRING BEANS. Prepare as for table use, carefully removing any strings. Blanch, cold dip, cut, and quickly pack in the jars.

SQUASH, ETC.: Such crops as vegetable marrow, summer squash, cucumber, and eggplant are peeled, cut in slices or small pieces, blanched, cold dipped and sterilized.

ONIONS AND LEEKS. Peel and blanch and cold dip; sterilize, seal, and cool.

MUSHROOMS are handled practically like onions, after the caps are peeled.

Special Treatment for Particular Crops

CORN must be blanched and cold dipped before being cut from the cob. Use a very sharp knife. Pack lightly in the jars; corn has so much starch in it that it swells and



Very obviously up-to-date appliances make for more efficiency and enable the worker to proceed with accuracy and comfort. Mrs. E. M. Hunt, Colorado, who won prizes from her last year's efforts

and fills the jars in cooking so give it about one-half inch in a quart jar. I have often been asked why corn, peas and lima beans took so long to sterilize. I give them three to four hours because the heat has to penetrate to the centre of the jar and burst the starch grains in the middle as well as on the outside of each grain. Corn can be cut from the cob and cooked before sterilizing if preferred. Boil for fifteen minutes; then sterilize.

MIXED OR COMBINATIONS. Corn with tomatoes does not take as long to sterilize as corn alone because the acid of the tomato helps to "digest" the starch. Other groups of vegetables can be canned, such as carrots (diced) and peas, which are a favorite dish with many people; onions and peas; corn and green peppers; succotash; and mixed vegetables for soup.

TOMATOES. These are about the easiest of all vegetables to can. They seem to keep whichever way they are put up. Wash, blanch and cold dip, skin and take out the hard stem end. Pack whole in the jars, add water and salt or a juice made from left over or broken tomatoes stewed till soft and strained. Sterilize.

Another way is to blanch five to ten minutes, cold dip, skin, pack tightly in jars, add salt and boiling water and seal tightly at once. Put into boiling water to cover. *Do not boil*—but let stand till quite cold. The fruits will be quite firm and fit for slicing and serving as "fresh" salad all winter!

WINTER SQUASH AND PUMPKIN should be peeled and the seeds and stringy centre removed. Slice small, boil till thick, and sterilize as usual.

Young Root Crops

It is folly to can old, mature roots and they are not worth the trouble. But the young succulent root is a toothsome morsel and, in fact, is canned economically.

Beets, carrots, parsnips, turnips, sweet potatoes, celeriac, kohlrabi, and such vegetables are all handled alike. Blanch, cold dip (skin when necessary), and either slice or pack whole as preferred.

Fruits

The Single-period Cold-pack method is also the best for fresh fruits. Use a silver knife for all fruit paring to prevent discoloration. Fruits can be canned with or without sugar. If to be used for the table with cream or custard, can them in syrup, honey, or corn syrup. The proportion is $1\frac{1}{2}$ cups equals 1 cup sugar. Syrups are either thin, medium, or thick. Thin syrup is made with one part of sugar to four parts of water. Medium syrup is made with one part of sugar to two parts of water. Thick syrup is made with one part of sugar to one part of water. Thin syrup is used with sweet fruits; medium syrup with sour fruits; and thick syrup for candying and preserving. Corn syrup and sugar in equal volume will be found quite satisfactory. If you are canning fruit for pies or to use in other cooking, use plain boiling water and they will keep just as well. Always keep in mind that for perfect sterilization you need perfect rubbers, perfect jars and perfect sealing; preservatives are not essential.

SOUR FRUITS, rhubarb, sour cherries, and gooseberries, all of which are good pie fruits, may be preserved with cold water *without cooking*. Wash and prepare the fruit, fill the jars, and run cold water from the faucet gently on the fruit for half an hour, then seal tightly.

Blanch apples, apricots, gooseberries, oranges, pears, peaches, quinces, pineapples and rhubarb.

Do not blanch small fruits such as blackberries, dewberries, currants, raspberries and strawberries. Wash all small fruits, pick them over carefully, discarding any that are unripe or over ripe. Pack them closely, pressing them down gently with a wooden spoon, and cover with medium syrup. Sterilize, etc., according to accompanying time table.

APPLES. Wash, peel, and quarter or slice. Drop into slightly salted cold water to keep them from turning brown. Blanch $1\frac{1}{2}$ minutes only; cold dip; pack in jars and cover with boiling water or thin syrup. Finish the jars and sterilize. Apples can also be made into sauce and then canned. QUINCES are canned the same way as apples.

APRICOTS. Blanch, cold dip, cut in half and remove pit. Pack in jars, the cut sides down; fill jars with medium syrup; sterilize.

PEARS. Peel and drop in slightly salt water to hold the color. Blanch and cold dip; pack in jars whole or halved; add thin boiling syrup to fill; add a slice of lemon, two or three cloves, or a small bit of ginger to each jar to give flavor.



These are reliable canning jars of many types. It is desirable to have glass or porcelain covers so that no metal can touch the contents at any point.



A water jacket oven such as this is a real help in any home. It may be used for canning or drying.

PEACHES should be blanched long enough to remove their skins; cold dip; skin; remove the stones. Pack whole or cut in halves, or slices. Crack some of the stones and add two or three kernels to each jar of fruit which greatly improves the flavor.

PLUMS. Pack into jars after washing without peeling or pitting. Add medium syrup. Sterilize and cool as usual. Another way, and one I use myself, is to blanch, cold dip and skin the plums. Pack in the jars, fill with medium syrup and sterilize. The bitter flavor of the plum is removed with the skin.

PINEAPPLES. Peel and take out the eyes. Either grate, cut into slices, or into small pieces; pack in jars; cover with medium syrup; sterilize.

TIME TABLE FOR BLANCHING AND STERILIZING
(Adapted from National War Garden Commission Table.)

VEGETABLES	BLANCHING Minutes	HOT WATER Minutes	WATER SEAL Minutes	STEAM PRESSURE IN POUNDS	
				Min. 5-10 lbs.	Min. 10-15 lbs.
Asparagus.....	10-15	120	90	60	40
Beets.....	5	90	80	60	40
Brussels Sprouts.....	5-10	120	90	60	40
Cabbage.....	5-10	120	90	60	40
Cauliflower.....	3	60	40	30	20
Carrots.....	5	90	80	60	40
Corn.....	5-10	240	160	90	80
Greens.....	15	120	90	60	40
Lima Beans.....	5-10	180-240	120-160	90	80
Okra.....	5-10	120	90	60	40
Parsnips.....	5	90	80	60	40
Peppers.....	5-10	120	90	60	40
Peas.....	5-10	180-240	160	90	80
Pumpkin.....	See directions.	120	90	60	40
Salsify.....	5	90	80	60	40
String Beans.....	5-10	120	90	60	40
Squash.....	See directions.	120	90	60	40
Tomatoes.....	To loosen skins.	22	18	15	10
FRUITS					
Apples.....	$1\frac{1}{2}$	20	12	8	.....
Apricots.....	1-2	16	12	10	.....
Small Fruits.....	None	16	12	10	.....
Gooseberries.....	1-2	16	12	10	.....
Oranges.....	1-2	12	8	6	.....
Pears.....	$1\frac{1}{2}$	20	12	8	.....
Peaches.....	To loosen skins.	16	12	10	.....
Plums.....	None	16	12	10	.....
Pineapples.....	3-5	30	15	10	.....
Quinces.....	$1\frac{1}{2}$	20	12	8	.....
Rhubarb.....	1-3	20	15	15	.....
Fruits without sugar.....	.....	30	30	12	.....

If You Don't Want to Can, Will You Dry?

DRYING or dehydration of garden produce is not to take the place of canning, but to supplement it. Much of the garden produce matures at one time, possibly more than can be put up in all the glass jars or tin cans procurable before it becomes stale.

Of course you will have a sterilizer for the top of your stove,

so get a drier that you can use in your oven or hang from the ceiling or use outdoors on fine days, sunny, and breezy, but not windy. Much heat is not necessary, either to keep the sterilizer boiling or for the things that are in the oven to dry. The temperature in ordinary latitudes should never go above 150°.

Practically all vegetables and fruits can be dehydrated or dried—it is simply extracting the moisture, leaving them shrivelled and greatly reduced in bulk. These dried articles can be kept in paper bags, cardboard boxes, baking powder cans, paraffin boxes—like the ones oysters come in—and other receptacles than canning jars. They take up little room in storage, and are easy to transport. For years I have dried mushrooms, parsley, celery leaves, and different herbs and kept them tied in paper bags hung up in the kitchen.

The one thing essential for drying, except in the sun, is an oven thermometer. Guesswork will not do. If the oven is too cold the food won't dry at all, and if it is too hot, you will *bake* instead of dry. For sun drying, spread out the prepared vegetables and cover so as to keep out insects and dust. Test by squeezing a handful and if it separates when the hand is opened it is dry enough. Dry until all moisture has been extracted, but not until it is brittle and will powder when touched.

If drying in the house, there are two ways to do it. By artificial heat, that is, in the oven or over boiling water, or by air blast (an electric fan). There are several good driers

on the market now. Here again the National War Garden Commission will help you. The Commission does not sell anything but it lists articles needed in the work and will answer inquiries. An ordinary kitchen knife very clean and sharp, will do for preparing small quantities of vegetables but for large amounts use a rotary knife machine for peeling, a cherry pitter, and a slicing machine. Before storing the dried goods must be "conditioned," i. e., poured back and forth from one container to another every day for about a week. You can then see if any part is too moist.

The Uplift of the Vegetable FLORENCE SPRING

Utilizing the Garden Crops in Place of Meats—Getting the Real Value of Vegetables and Putting them on the Table in Appetizing Forms

IN THESE days, when not only the price of meat but also the need of conserving it for its imperative and almost consecrated present use, makes it often a forbidden luxury, food administrators and housekeepers are striving to obtain adequate substitute food values from other sources; and other articles of diet are brought into unaccustomed importance.

Chief among these are vegetables. Always valuable and delicious, they are now still more appreciated and made a dependence. This is the day of the "kitchen garden" and all over the land it is extended, as never before, even encroaching on the ornamental features. How shall we best utilize the fruits of our labors in this direction? How get the best value from the space we cover, that there be no waste—neither of the crops themselves nor of the labor spent in raising or conserving them?

THERE is often a tremendous amount of waste in a large, and even sometimes in a small garden. For instance, the remainder of a row of radishes (after all possible have been consumed) often swells into giant tubers as big as your wrist, of no possible use, eating up good fertilizer and squandering good space! How often does half of a lettuce bed "run up" and go to seed? And as for the prolific and luxuriant string bean, how often does it come to table maturity all in a day, and constitute itself a burden and a reproach to the overworked housewife, striving night and morn to utilize without waste all of her garden products, either for present consumption or as a winter supply? How often does half of the currant or strawberry crop rot, or wither on bush or vine?

Therefore, let a little preliminary planning and calculation, with expert advice if need be, prevent this waste of space, material, and labor.

In the general garden scheme, plans must be kept active to plant adequately for an extended season. That there may be no hiatus between possibly belated crops, I always plan for a few "fillers" to be used between times or when a sudden shower or lack of time prevents the picking of those crops requiring leisure for the operation. New Zealand spinach, Swiss chard, summer cabbages, are of this class; as well as young beets and carrots planted for succession.

Use freely at other times during the summer and fall, the vegetables appropriate to that season, saving the ones above mentioned for emergencies, and for late fall use. For this extended use, plant plenty of tomatoes, late crops of beets, carrots, turnips, cabbage; as well as the spinach, various "salad" vegetables, Swiss chard, etc. We have found that the curly endive is one of the very best "salads" to plant for very late use. It stands very hard frosts and the delicate bleached "middles" may be used almost until covered with snow.

Swiss chard is our standby as a "green" and this also may be used after even severe frost. We extend its season by digging out one of our coldframes and setting in it a few stocky plants, keeping them covered

with the replaced sash. Lettuce, also, we sow late and with some of the plants fill another coldframe. Throw mats over both at night. Be sure to plant an extra late planting of corn "on chance"—I don't think we have ever failed to get the benefit of our latest "gamble."

Brussels sprouts, winter cabbage, salsify and cauliflower help to extend the garden vegetable season, and parsnips may be used until the ground freezes too hard, although they are, of course, better and sweeter in the spring. Enough onions, turnips, squashes, etc., to last well into the winter, are, of course, an inference. Before leaving the subject of the greatest possible extension of the various garden products, let me say a word for the wonderful "ever-bearing" strawberries, which are all that their warmest admirers claim for them, coming into bearing at least a week earlier than the ordinary ones, and ripening until long after the hard frosts have stolen their flavor. Last year I picked plenty of bright red berries frozen perfectly stiff, the plants still displaying green berries, buds and blossoms.



Stuffed green sweet peppers—parsley decoration peppers parboiled—filled with any creamed vegetable (or meat or fish)

PLANT now and abundantly of those vegetables suitable for canning or other conservation. String beans may be raised in quantity, and coolly and easily conserved by cutting the young tender pods as for table use, and packing in stone crocks with layers of salt between, and at bottom and top. This is an easier and more comfortable method than canning, and the field of operations may be on the piazza or under a shady tree.

Experiment has shown the possibility of successfully drying, for winter use, nearly every vegetable grown. Our grandmothers dried corn, apples, peaches, stewed pumpkin, etc., with excellent results, and the exigencies of present needs are teaching us to "better their instruction."

The "cold-pack" method of canning—so universal and successful, enables us to now enjoy in winter as the results of our own labors, hitherto unknown luxuries in the way of vegetables, as the old "open kettle" process was inadequate for much vegetable conservation. See that plenty of summer squash, corn, peas, young beans, etc., are raised for this purpose, if space is adequate. Tomatoes keep perfectly, canned by the open kettle method—easier and quicker. They are delicious and economical of space canned as a purée; seasoned while cooking, by combining with a variety of finely minced vegetables and herbs.

When "harvesting our crops" for use, we

bury a part of our carrots, turnips and beets in a box (with excelsior top and bottom) or empty coldframe. Dig down a couple of feet, cover the box with earth and then a mound of leaves and "rubbish." In the spring, when the frost allows us to dig, they will be found to be crisp and fresh, and a great luxury and economy. Spinach and corn salad may be planted in the fall for early use; and of course parsnips and salsify are waiting in liberal rows in every garden for the spring harvest.

After our vegetables are raised, harvested, and conserved, how shall we get the most beneficial and economical use of them? Beside their on-the-face value, as vegetables pure and simple, they may be largely used in adequate—as to calories and chemical combinations—substitution for the meat that is now being so universally partly eliminated from our menus.

Vegetable Chowders

VEGETABLE chowders with the addition of a little pork or meat flavoring are delicious, nourishing and substantial. Select, each time planned, some especial vegetable to give individuality: as "potato," "onion," "corn," "tomato," or "celery," chowder; combining the main vegetable ingredient with the usual chowder attributes and seasonings. These combinations adequately and healthfully fill the position of "main dish" at a meal. Accompany them with a green salad—lettuce, cabbage, dandelion—and a simple dessert, and you have a perfect combination.

Salad Specialties

PLENTY of salad vegetables should be raised in the garden.

A salad also, with its various ingredients and attributes, may form the basis of a lunch or supper—or even a hot weather dinner—and be accorded the prominence and value it deserves.

A potato salad, with onion, lettuce, celery, a hard boiled egg or two, and seasonings (accompanied with cheese balls and brown bread) with a good French or mayonnaise dressing is surely a substantial dish.

The various tomato combinations: tomato, shredded green sweet pepper and latticed cucumber; tomatoes hollowed and filled with baked or green beans, diced celery and potato, peas and diced new carrots; either of the above combinations, with lettuce, cottage cheese and a nice dressing; and sandwiches of any of the dark breads, is both delicious and satisfying.

And the various regular "vegetable salads"—a toothsome and calorie-sufficient combination of any and every vegetable left over or cooked and prepared for the purpose—with a few bits of crispy bacon added at the last minute and a garnish of iced eggs, with a good mayonnaise, is one of the very best salads ever made.

Vegetable Escallops for Meatless Days

AVARIETY of vegetable "escallops" are also increasingly coming into favor as novel, substantial, healthful, and attractive main dishes for "meatless days." Domestic science experts and housekeepers are constantly experimenting in this direction with



A vegetable chowder (no meat or fish). Potatoes, onions, seasonings and milk—(very delicious) with accompaniment of shredded lettuce (the green portion) and shredded cabbage, and sliced egg over—French dressing

excellent results; and I venture to predict that a gain in the family health—as well as purse—will be noticed as a result of the increasing use of vegetable combinations; and also we have the primary and great satisfaction of knowing that we are helping save the meats for the imperative present need of the troops.

Those vegetables useful in scallops are summer squash (seldom prepared in this way but very delicious) boiled, mashed, seasoned and covered with crumbs or cheese; winter squash, cubed, boiled, covered with highly seasoned cream sauce, crumbs, and butter substitute, and browned; tomato, escalloped in the usual way, or with the addition of minced onion and green sweet pepper, corn, or sieva beans; corn—especially delicious—combined with one or two beaten eggs, salt, a bit of sugar, butter substitute, milk and baked until "set"; a combination of corn and beans, or corn, beans, and tomato, cabbage, brussels sprouts or cauliflower; potatoes, celery, and onions—particularly savory.

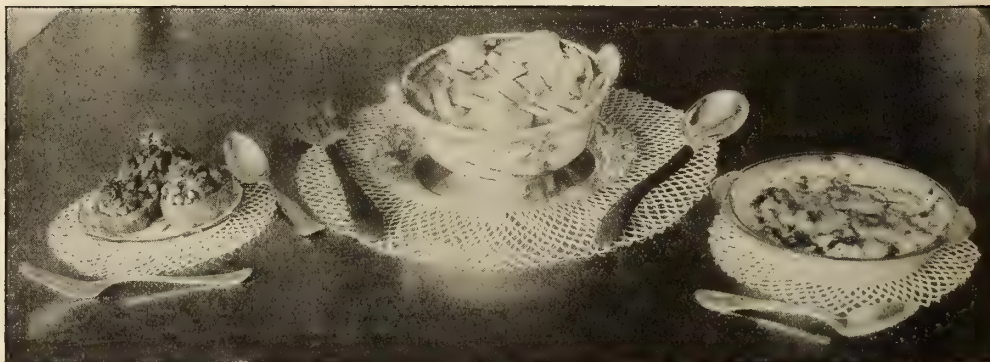
All the above, seasoned and baked to perfection, make perfectly good main dishes, taking satisfactorily the place of meat.

The various vegetable loaves should be planned for. Different varieties of beans are largely used, combined with cereals, nuts, seasonings, and other flavoring vegetables—onions, tomato, etc.—and an egg and crumbs to "bind." Carefully prepared and

Casserole of vegetables—with small amount of meat added in a good gravy—

At right, an escalloped of creamed parsnips, with grated cheese over—

At left—Salad of cooked beets, hollowed out, and filled with carrots and peas. French dressing—may be filled with a creamed or buttered diced vegetable, and served hot, as a vegetable. Latticed cucumbers with French dressing as accompaniment



roasted, these combinations are both valuable and delicious.

The Place in Soups and Purées

THE use of vegetables in soups and purées is universal, and a matter of course. In this connection, save the water in which vegetables are boiled, for use in soups. Much of the sugar and mineral content, so valuable and pleasant to the taste, is lost in even careful cooking, and should be conserved. Some authorities have advised the thick peeling of potatoes to eliminate this

green outside leaves of lettuce, are deliciously utilized in soup making.

Carry the Thought to Your Neighbor

THE more extended use of vegetables as "substitutes" should be re-urged and reiterated in your community—both for meat dishes and as supplying to the diet the various elements, so valuable always, and especially now. Sugar is scarce: there is much in vegetables. Carrots, corn, peas, beets, are rich in sweetness. See that we conserve it for our advantage. Salines, potash salts,



Vegetable loaf, with small amount of meat flavoring added (which may be omitted if wished.) Serve hot, with garnish of mound of peas and carrot alternating



A vegetable salad—lettuce, cucumber, (latticed) peas, carrots, tomato, and beets, with cheese rolls and toast strips

starch, organic acids, are all most valuable. Make it a point to see that none of these elements are wasted. Cook spinach always in its own juice, and save every spoonful. Also remember to save onion water for gravies and soups. Carrots, peas, and many other vegetables may be carefully cooked in as little water as possible and that remaining, if any, made into an accompanying sauce, or saved for soup flavoring as suggested.

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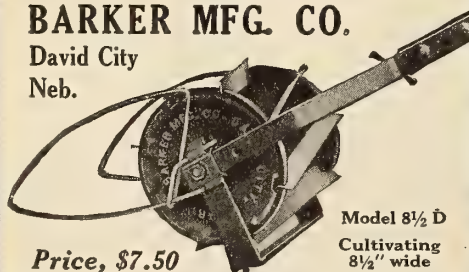
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State _____



JUNE is a busy month for the weeding hoe and spray pump. Be ever vigilant in keeping down weeds, and have a dust mulch to conserve moisture. The success of the garden this month depends on keeping the soil stirred, and constant fertilizing for quick growing plants like cabbage, and eternal vigilance in spraying to prevent disease and keeping down the insects.

The asparagus bed especially should be free of weeds. Salt will kill the weeds and be otherwise helpful to asparagus. It is a salt-water plant. The cutting of asparagus should last only two months, so if begun the first of April, as is usual in the middle South, then the cutting should cease the first of June. The bed should be heavily fertilized and the plants allowed to grow; and in the fall cut down the bushes before the seed ripens, so as to throw all the strength into the roots.

Work to be Done in the Vegetable Garden

SOW seeds of whitloof chicory, brussels sprouts, and cauliflower and fall cabbage in coldframes in well pulverized soil—to be transplanted later into the open ground. Successional plantings of snap beans, corn, and beets should continue to July 1st, and begin again the end of August, planting then the early varieties. Sow blackeyed peas, soy beans and navy beans.

Keep up a continual spraying every two weeks with bordeaux 4-5-50 formula, with 2 lbs. of arsenate of lead paste dissolved and mixed with it. The latter kills the beetles and worms on potatoes, cabbages, melons and tomatoes; and the former insures against leaf blight. This spraying is more efficacious if begun as soon as the plants appear above the ground. The squash borer can be eradicated if the vines are sprayed when very small and kept up constantly every two weeks. Tomato rot and leaf blight can be prevented in the same manner.

Make strong stocky plants of tomatoes by pruning away the weak shoots on either side. Either train to one stake or else allow two or three strong stems to grow, training to three stakes. Cut the stakes six feet long, planting them one foot below the ground. Notches cut in the stakes every two feet will hold the twine in place. Wood ashes and acid phosphate and bone meal about equal parts is a good fertilizer for tomatoes. Too much nitrogen in the fertilizer makes the stalks spindly and the vines run to leaf. The soil should not have too much humus, but be of a firmer texture.

Work around the corn, after thinning out to one stalk to every foot for dwarf corn, such as the Golden Bantam and two feet apart for tall growing varieties. Do not dig too deep and disturb the roots, but keep the weeds away. Corn needs constant working (all plants do in fact) to prevent the ground from baking.

Plant at the end of June or the first of July the main crop of Irish potatoes for winter storage. You will find directions for planting potatoes given in the February number of THE GARDEN MAGAZINE. The

(Continued on page 244)

The beauty of this evergreen
is preserved by an

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RUST PROOF

BED GUARD

LET air and moisture reach the roots. Work the ground. This Excelsior Rust Proof Bed Guard prevents trampling and packing by animals. Also protects the lower branches, preserving the symmetry of the tree. Prevents mowers and garden tools getting too close and clipping off the tips of the branches. These guards can be moved about or taken up and laid away for the winter.

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FARR'S Dahlias and Chrysanthemums

DAHLIAS may well be given the place of honor in the autumn garden, and I am sure that the readers of Garden Magazine will wish to try some of the splendid varieties that have been grown at Wyomissing Nurseries.

In making my collection I have tested more than twelve hundred sorts, from these I have selected what I consider the very best of the older varieties, the choicest of the newer introductions, and the most promising of the novelties.

Dahlias may be planted at any time from the middle of May to the first of July. If set too early, the blooms are not produced freely.

FARR'S Hardy Chrysanthemums

When other flowers have succumbed to November frosts the hardy chrysanthemums hold forth, with blooms of rich yellow, crimson, old-rose, white, and maroon, unaffected by the approach of winter.

My collection at Wyomissing contains only such varieties as bloom outdoors in normal season, as the very late sorts are not altogether satisfactory. These plants may be set in the garden any time before the first of July, and should bloom next fall.

Farr's Hardy Plant Specialties

gives complete information about Dahlias and Chrysanthemums, with a list of varieties in the different classes. If you do not have a copy of the Sixth Edition, write me, and it will be sent promptly.

I have also prepared a special list of Flowering Shrubs of distinct worth, new Yellow Tree Peonies, Perennials and summer bulbs which will be sent to all who desire it.

Bertrand H. Farr

Wyomissing Nurseries Company
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Weeks. Does It Get It?**

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Weedy gardens run the enthusiasm out of many a home gardener long before the garden bears crops. Don't let weeds make a slave of you! Use a

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Vase—\$1.00 Postpaid

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PETERS & REED POTTERY COMPANY, South Zanesville, Ohio

(Concluded from page 242)

Green Mountain, Peach Blow, and Snow are good late varieties.

Now is the time to transplant celery plants sown in May in a coldframe, placing them three or four inches apart in another coldframe to make stocky plants to be set in the open ground in July.

Reminders for the Flower Garden

SOW a few pepper seeds along with the Asters. The beetle will attack the peppers in preference to the Asters. If Asters are sown late, either at the end of May or the first of June, they are less apt to be attacked by the beetles.

Spray Chrysanthemums with "Black-leaf 40" to rid them of the aphids.

Trim Dahlia plants of all the weak shoots and have only one or two strong ones left.

If large blooms are preferred on Chrysanthemums to a mass of bloom, pinch off the side shoots and also a few buds.

Cut down the Cosmos with clippers to make them branch out rather than grow into spindly plants.

Successional sowings of annuals can be made to get continuous bloom all summer and late into the Fall. Nasturtiums, Pansies, Larkspur, Cornflower, Phlox Drummondii, Mignonette and Sweet Alyssum are a few that can be treated this way.

Dead Roses should not remain on the bushes. Cut Roses every day. Keep the soil stirred and fertilize with well rotted cow manure and some bone meal, and wood ashes, or water occasionally with manure water.

A low-growing annual like Alyssum or Portulaca or Mignonette is pretty under the Rose bushes, and keeps the roots cool.

"Attention" in the Orchard

IF THE limbs of the trees are too close cut them out.

Thin out fruit if too crowded on plum, apple, and peach trees. Spray for codling moth or curculio up to June 1st,—bordeaux with arsenate of lead is the spray to use. See that the spray goes well up under the leaves, and right into the heart of bloom.

Virginia. J. M. PATTERSON.

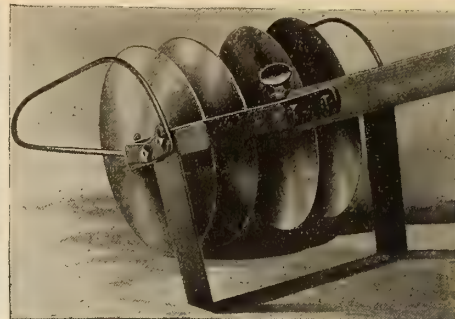
In the Rose Garden

KEEP the blooms cut. This not only keeps the plants looking better; but serves also as a sort of constant pruning which stimulates the further growth of blooming wood. Cut the buds with fairly long stems; cut always above an outside eye, so that the plant will make a vase-shaped or open centre growth.

Spray regularly. The green aphid is almost sure to put in an appearance, so add nicotine to whatever other spray you may be using (it will take only a few cents worth each time); and keep this pest from getting any serious start.

Put on a summer mulch. The clippings from your lawn will be excellent for this purpose; or light manure, or the remains of the winter mulching, if saved; even sifted coal ashes will help hold the moisture around the plants.

While the bushes are blooming profusely, an occasional application of liquid manure, or of nitrate of soda, will help them stand the strain without having the blossoms decrease in size, as they will if the plants are not helped.



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It lists nothing that is not well worth growing; all undesirables have been discarded. Yet it covers everything in

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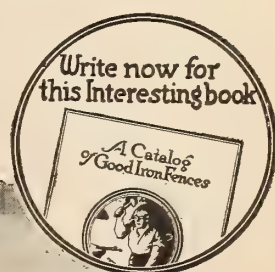
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You have some blanks in your Rose bed perhaps, or you were late in getting your Rose Garden plans under way?

Well, we have prepared for just such a contingency and can supply plants of all the Standard kinds in full growth, three year old stock, from 6" pots: Ophelia; Radiance; Mdm. Collette Martinette; Red Radiance; The Killarneys and many other varieties.

Write, or better still, call and see the stock.

A splendid selection of the Baby Roses also from pots; Baby Doll; Cecil Brunner; Geo. Elgar; Irish Fire-flame, etc., etc.

**Price \$6 per dozen
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*Importers and Growers of Chrysanthemums,
Roses, Carnations and Hardy Perennials*

MADISON NEW JERSEY

COMING EVENTS CLUB & SOCIETY NEWS

Meetings and Lectures in June

(Following dates are meetings unless otherwise specified)

1. Lake Geneva, Wis., Gardeners' & Foremen's Association.
New York Botanical Garden, Bronx Park. Lecture: Diseases of Garden Crops and Their Control.
3. Larchmont, N. Y., Garden Club.
New Bedford, Mass., Horticultural Society.
4. Garden Club of Pleasantville, N. Y.
5. Short Hills, N. J., Garden Club.
6. Marshfield, Mass., Garden Club.
7. Pasadena, Cal., Horticultural Society.
8. Dobbs Ferry, N. Y., Horticultural Society.
New York Botanical Garden, Bronx Park. Lecture: Insect Pests and Their Control.
10. New York Florists' Club, Grand Opera House.
Garden Club of New Rochelle, N. Y.
Rochester, N. Y., Florists' Association.
Park Garden Club, Flushing, L. I.
11. Garden Club of Ridgefield, Conn.
12. Valdosta, Ga., Floral Club.
- Short Hills, N. J., Garden Club.
Nassau Co., Horticultural Society, Glen Cove, L. I.
- Lenox, Mass., Horticultural Society.
14. Westchester, N. Y., & Fairfield, Conn., Horticultural Society.
- Connecticut Horticultural Society, Hartford, Conn.
Gardeners' & Florists' Club of Boston, Horticultural Hall, Boston.
18. American Seed Trade Association, Chicago, Ill. Annual Meeting.
- 18-20. American Rose Society, Hartford, Conn., Show.
19. Rhode Island Horticultural Society, Providence, R. I.
Short Hills, N. J., Garden Club.
Tarrytown, N. Y., Horticultural Society.
20. Salisbury, Conn., Garden Club. Subject: Plants as Factors in Home Creation.
- Marshfield, Mass., Garden Club.
21. Dahlia Society of California, Palace Hotel, San Francisco.
Pasadena, Cal., Horticultural Society.
22. Dobbs Ferry, N. Y., Horticultural Society.
24. Park Garden Club, Flushing, L. I.
25. Garden Club of Ridgefield, Conn.
- 25-26. American Sweet Pea Society, Greek Hall, Philadelphia, Pa. Annual Meeting and Show.
26. Short Hills, N. J., Garden Club.
- 26-28. American Association of Nurserymen, Hotel Sherman, Chicago, Ill. Annual Meeting.
28. Connecticut Horticultural Society, Hartford, Conn.

Fuel in Cooking.—The coal situation last winter led me to do considerable experimenting in the use of gas and coal, in cooking different vegetables. I had a good quantity of Detroit Dark Red beet, averaging 3 in. to 3½ in. in diameter, in soil storage. Earlier in the season, I had canned some of the more desirable 2-inch size. The difference in cost of preparing these for the table proved astonishing. It took from 3½ to 4 hours to cook the large beets to a tender stage. During that time, the coal consumed to boil the beets proved to be about 5c., with coal at \$10 per ton. The tender, canned beets were ready for serving in less than half an hour, requiring about 2c. worth of gas. Even adding to this an extra cent's worth of gas which was used to can the beets by the cold-pack method, it still proved 40 per cent. cheaper to put the small beets on the table than to get the larger roots ready. I would be interested to learn whether other Garden Neighbors have made similar observations.—*Mrs. A. Kruhm.*

The Cause of Heather Turning Brown.—In THE GARDEN MAGAZINE for August 1917 there appeared an inquiry from me concerning the Heather and the probable cause of its browning so badly here. Last winter most of the plants were covered with snow for two months (from December 8th) and all have turned brown entirely. Evidently low temperature is the cause and, therefore, the Heather is not suited to our climate.—*J. L. Wood, Ivy Depot, Va.*

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"HAMMOND'S SLUG SHOT"

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Don't Cultivate Bugs!
Bugs, blights and plant losses due to both, rob the planters of this country of seven-hundred million dollars' worth of truck and garden crops each year. The worst pests are, perhaps, the lice of many species that suck the plants' life blood. To fight them effectively, use a contact poison.

Aphine has been the standard contact remedy for use against green, black and white aphids as well as thrips, currant worms and other soft-bodied insect pests for many years. Especially adapted for homegarden use since it is put up in convenient quantities, quickly diluted, and easily applied as per direction on each can.
Fungine for Fungi A cleansing liquid sulphur spray, equally effective to combat blight on vegetables, fruits and flowers.
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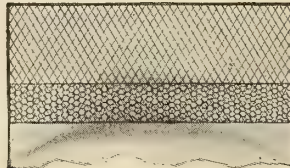
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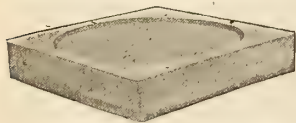
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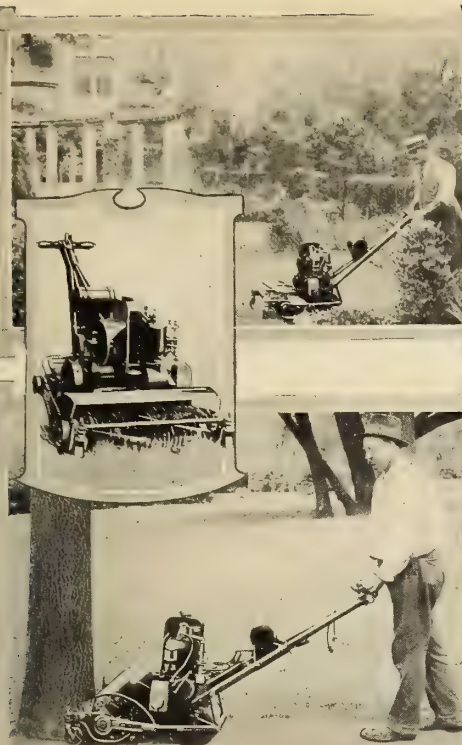
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GARDEN

MAGAZINE

July 1918

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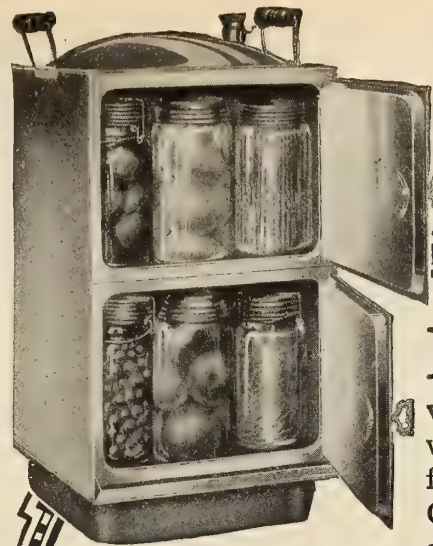
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THE GARDEN MAGAZINE

JULY, 1918

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Published Monthly, 25c. a copy. Subscription, Two Dollars a Year.
For Canada, \$2.35; Foreign Countries, \$2.65.

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GARDEN CITY, N. Y.

CHICAGO: Peoples Gas Bldg. BOSTON: Tremont Bldg.
LOS ANGELES: Van Nuys Bldg. NEW YORK: 120 W. 32nd St.,

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THE WINTER of 1918 proved one of the severest tests of the *hardiness* of many forms of plant life. It proved, beyond a doubt, that certain plants cannot be killed by cold weather but that it will rather stimulate their blooming power for the following season. You, who have losses to replace among shrubbery or in the hardy border, will do well to pin your faith to

Harris' *Prize Winning* Peonies and Irises

again proved their endurance, their worth and hardiness with us when, last month, they burst into a riot of beauty seldom equalled. All Harris' Peonies are guaranteed true-to-name. What you get from me will bloom next Spring as promised.

Large stocks of both Japanese and German Iris enable me to offer the choicest kinds obtainable at prices within easy reach. All are hardy "as oaks" without protection whatever.

Plant these Early this Fall for Flowers next Spring

The following Peonies represent a choice assortment of charming colors and cover the blooming season from early to late.

Canari, late amber white, white guard petals.

General Bertrand, large, dark, silvery pink; early.

Couronne d'Or, late white, tinted yellow, streaked carmine.

Jeanne d'Arc, lilac rose, creamy white collar.

Felix Crousse, brilliant midseason red.

Philomele, creamy white with bright pink collar.

Special Offer: Strong, one-year-old root of each of the above, 50c; all six for \$2.50. Two-year roots, \$3.75. Here are

SIX OTHER LEADERS

Offering a similar succession of bloom as above, and an equally attractive variety of colors:

Albert Crousse, large late salmon pink.

Augustin d'Hour, brilliant midseason red.

Germaine Bigot, large midseason lilac rose.

Mad. Emile Lemoine, midseason white, tinged pink.

Marguerite Gerard, late salmon pink.

Monsieur Jules Elie, early lilac rose.

Strong one-year-old roots of above, \$1.00 each, all six for \$5.00. All guaranteed to bloom true-to-name next Spring. Two-year roots, \$7.50.

Write for Descriptive List To-day

Offers the "Best by Test" varieties of Hardy Peonies, Irises, Phloxes at most attractive prices. *Fall is the time* to set out these popular favorites if you would enjoy flowers early next Spring. Write or order NOW—delivery made at planting time.

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A clear, concise and thoroughly practical presentation of every stage of the various processes of preserving food. It describes each operation simply and in such detail that any one trying for the first time to preserve garden products will be able to proceed from A to Z without mishap. Beside the canning of all fruits and vegetables (described in alphabetical order) the author takes up canning in honey—a new subject—and drying.

This is *the* book for the beginner, while the expert, always on the lookout for new ideas, will find it especially valuable for the many new ideas picked up from thousands of experimenters.

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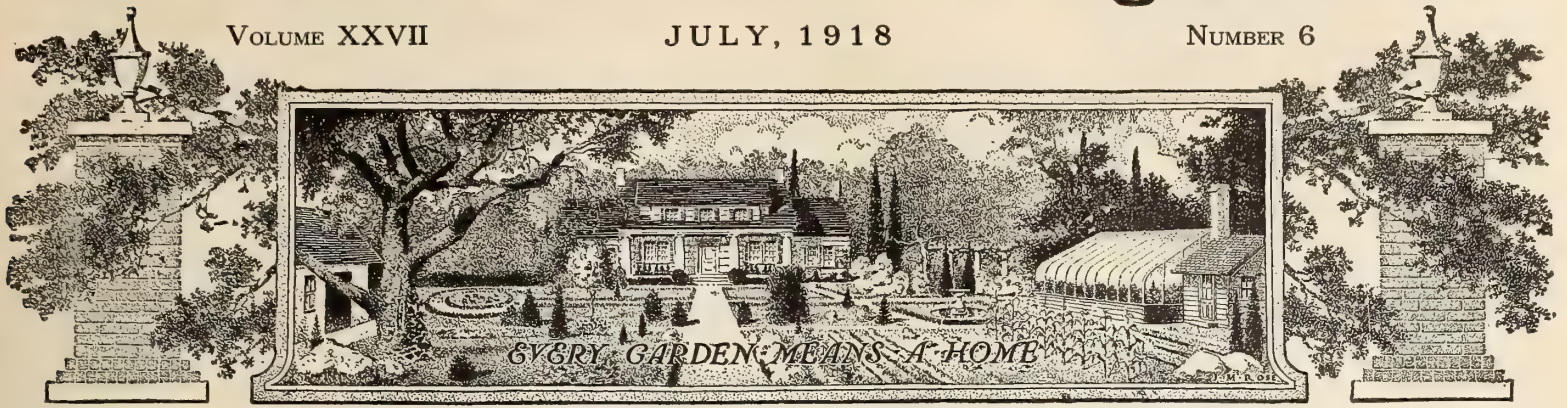
Doubleday, Page & Company, Garden City, N. Y.

The Garden Magazine

VOLUME XXVII

JULY, 1918

NUMBER 6



AMONG OUR GARDEN NEIGHBORS

Selective Draft to Replace Losses

THE disastrous effects of the winter of 1917-18 have left their impress in practically every garden in the country. Winter-killing is a strange creature. It does not always strike in the way that we might have expected. The "average" winter never happens. Every season has some surprises in store for us. Once in a while, at periods of a score or so of years, we pass through an exceptionally severe strain and when the spring comes we begin to count up our surprises and continue to add to the roll of losses as the season unfolds.

There is a universal tendency to plant largely of that material which grows most easily. It is just this material that is likely to succumb to a strain. A glaring example patent to everyone at this time lies in the California Privet. But we have other surprises. Many evergreens that seemed to have gone through the winter and have suffered severely, if not discarded in the first days of spring, have to a large degree recovered and although set back considerably, they will, if the conditions are favorable next winter, have a chance to rehabilitate themselves.

A winter such as we have passed through is a triumphant vindication of the plants that are recognized as really hardy. Hardiness is of course a relative term, and to a large extent hedge plants suffer because they are constantly pruned until late in the year; which pruning stimulates a late growth which goes into the winter in a soft if not succulent condition. This succumbs easily. The old-time gardener was well within the mark when he preached the doctrine of "thorough ripening" of the wood before going into the winter. Little by little we take chances until the border line of safety is overstepped and then in an exceptionally severe season, the bottom drops out, and plants that we have known for years as familiar friends are no more!

While it is natural that the gardener will essay from time to time the cultivation of unusual plants—a thing that is not to be derided indeed—it is also true that the framework or background of our plantings should consist of those subjects that are really resistant.

The nurseryman's stock has been hurt equally with that of the private gardener and

owner. His stock of the more tender and less resistant subjects is depleted. He cannot supply the stock to refill the gaps. Something else must be substituted and there is a certain amount of satisfaction in this, as it will teach the planter to use more material that has withstood the trying test and has come through the ordeal. Now in the midst of summer the gaps are fully realized and the losses can be counted; and just as on the line of battle the military commander takes toll of the losses through the roll call after action, so in the same degree do we in our own surroundings take toll of the losses, and equally with the military commander we must prepare to fill the gaps in our ranks. We must draw on the reserves; and these reserves are the tested and tried material that have come through the blast.

Everything that was dead in spring, or has failed to recover during the early summer season, will have been cut out and the gaping gaps are standing waiting to be filled. It is time now to canvass the losses and while the losses are being counted, while the vacant spots are glaringly evident, to make arrangements to repair the damage in the late summer and early fall by a selective draft on the

reserves of the nurseryman. This done, the former cared-for condition can be restored, the garden can be reorganized and the work of repair will have been got out of the way before the stress and reality of "war garden" activities open up next spring. This year as never before, fall planting as it is called (it really should be late summer planting) has a definite reason for attention by the gardener. Plan and order now, plant in fall, and be clear for food garden work in its proper season.

Stock Taking Time in the Garden

ONE of the business customs of America makes July the almost universally accepted month for "taking stock." The seedsman weighs his seeds, the nurseryman counts his trees, the merchant measures his wares, and the dealers arrange their shelves for fall business.

Why wouldn't this be an ideal proceeding to follow in the garden? Now, while every plant, tree, or shrub has reached the pinnacle of perfection for the season, is a good time to make notes concerning the short-comings or limitations or future estimated possibilities of every form of plant life in either the pleasure or utility garden.

Few gardens, even after having been thoroughly cared for during a number of years, present the picture the owner desires. Every year reveals either progress or lack of it, the latter being particularly pronounced during July. This is the month that encourages vision, planning. This is the month when you will become thoroughly impatient with the bare spots created by last season's exceptionally severe winter killing. Now, please, do not "plant in haste to repent (replant) at leisure." Study the material available to fill the gaps, and take steps *right now* to insure yourself against a recurrence of last winter's losses.

Last winter was the greatest vindication of *hardy* plants and shrubs, particularly Peonies. Their profusion of bloom last month was unquestionably due to the thorough rest of the roots last winter, and perfect maturity of plants last fall. And don't forget that, for best results, Peonies, Iris and all other hardy plants should be set out during the next few months or as soon as they are obtainable from the nursery.

America needs more evergreen and fewer



Privet hedges. Not that there is no place for Privet. Quite the contrary, we need it as an exceptionally rapid grower. But whenever you set out a Privet hedge, set Hemlock, Spruce, or any hardier line of defense immediately behind it. This method of hedge insurance is employed with remarkably satisfactory results in many western sections. When the winter "gets" the Privet finally, it leaves behind a sturdy evergreen hedge, as a testimonial to the owner's foresight.

Many of the recent introductions of "Chinese" Wilson have stood the test and those enterprising nurserymen who have secured stocks of those desirable aristocrats will be found to have been rendering American horticulture a real service.

Gardening—the Great Democratizer

OUT in an exclusive suburb, on his acre lot, lived Bill Jones. He knew his neighbor, Henry Jones, well enough to pass the time of day and comment upon the weather. There, relations stopped.

Out of a clear sky, on April 15, 1917, came that memorable proclamation of the President, making gardening a patriotic duty. Bill Jones began to dig; so did Henry. One bright May morning Henry discovered a new species of bug; so did Bill. They got together about this new menace, they talked it over across the back fence. Then, figuratively the fence—a barrier—was broken for all time!

In all sections of the country, this scene repeats itself. Everywhere, gardening proves the great leveler. It has come into its own as the great humanizer that wins where other factors failed. That great heritage of the human race—the ability to dig, sow seeds, and gather crops—is making this nation the truest, greatest democracy extant.

The Right Way To Layer Carnations.—The best time for layering Carnations is about the end of July. This is a very satisfactory way of propagating the plant if it is done in the right manner. The first step is to take away the leaves from the branch which is to form the layer. An incision is then made below a joint on the underside of the stem as can be seen in the photograph. This incision should be carried upward about half way through the joint. It is a good dodge to put a wee pebble in the opening to keep the parts from closing together again. The layer is then pegged down with wire, or in some other way. A little sand and leaf mold



Layering, a method of rooting a cutting while it is still attached to the plant, is an easy method of propagation

should be heaped up around the stem as indicated by the dotted lines in the illustration. —S. Leonard Bastin.

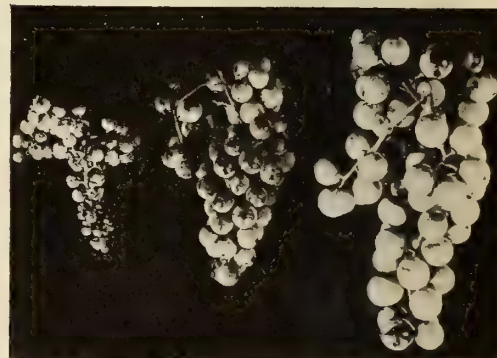


Combining use and utility. Beta grape as a porch vine giving shade and a bushel of fruit

The Beta Grape.—It is becoming a common thought among us that luxury must give way to necessity and that something useful must be tucked into every spot not hitherto used to maximum capacity. When this idea takes full growth, there should be a voluminous demand for the Beta grape. To show how this remarkable variety is doubly useful I may simply state that my one root provides my home with the most delightful, vine-embowered porch that one could wish, and yields one to two bushels of fruit per year beside. The Beta grape originated at Carver, Minn., with one Jacob Suelter. It is said to be a cross between the wild northwestern Frost Grape '*Vitis vulpina*', and the Concord grape. The cross was made in 1870. Seedlings flowered first in 1881. That Beta is really a hybrid I gravely doubt. Certain it is, that of very many seedlings which come up under the vine, none have yet shown any indication of reversion to the Concord type. But they have not been allowed to get above six inches tall. And that is no matter for our present purposes. My stock came from a nurseryman in Yankton, So. Dak., and this attests the hardiness of the variety. It is believed to be as iron-clad as its wildling parent. It is easily propagated in the usual way by cuttings, and is a prodigious grower. The first year my plant grew a shoot 8 ft. tall. I cut it back to 4 ft., and the next year three canes shot up to the top of the porch and began to interlace along the eavestrough. In its sixth year it covers three sides of a 10 x 12 porch, has spread along the east end of the house on each side of the porch, and is starting around the corners upon the north and south sides. Meanwhile the grapes are more numerous every year, and the bunches are bigger and better. The bunches vary very much in size and density. Six inches long is almost a maximum, though some exceed that. Frequently the bunches are heavily shouldered. The berries are of small or medium size, black with copious waxy bloom. They begin to color in August—earlier or later according to the season. From this time onward they are excellent for cooking; and also excellent food for robins and catbirds and brown thrashers and orioles. Indeed, I usually lose a large part of the crop by these marauders, and finally gather the remainder, still unripe, in order to have a share for the family indoors. If birds are kept away, the grapes become quite ripe and rich by the first

of September. But they stay in good condition until October first, and still show no sign of dropping. They are injured by severe frost just as ordinary grapes are. The flavor is very rich, strongly acid, but not biting or irritating to the lips. The juice, prepared and bottled, needs about 3 volumes of water to make it first rate for drinking. It "goes a long way" with the housekeeper. Those who know Beta prefer it to any other kind for culinary use. It is rather strong for eating out of hand unless fully ripe. If you want a vine to shade a back porch, a pergola, and arbor, a shed or a hen-yard, why not use this vigorous, beautiful, hardy and productive Beta grape?—Henry S. Conard, Grinnell, Iowa.

Begonias for Hanging Baskets.—I want to say a word in favor of Begonias for hanging baskets, which deserve a much wider cultivation than they now enjoy. This may be due to the fact that very few American seedsmen list this charming summer-blooming bulb. Two years ago I obtained half a dozen bulbs from E. Krelage & Sons, Haarlem, Holland. The bulbs resemble those of the tuberous-rooted Begonia, but the habit of growth and of bloom is quite different. To obtain the best effect three bulbs should be placed in a 6-inch basket. Each bulb sends up two or more shoots, which develop rapidly and begin at once to produce blossoms. These are borne in clusters of three—a double staminate flower between two single pistillate blooms. The weight of these blossoms causes



Bunches of Beta grape (centre) compared with wild fox grape (left) and *labrusca* Worden (right). It is intermediate in size, taste, and texture

the slender stalks to droop gracefully over the sides of the pot. They branch freely, each branch producing its quota of flowers, and by midsummer the basket is covered with a mass of foliage starred with brilliant blossoms. They may be had in white, yellow, pink, and red. The foliage differs from other Begonias, the leaves being long and narrow. The bulbs may be carried over from year to year, by drying them off in the fall and storing them in a dry cellar or closet, in the same manner as the tuberous-rooted Begonias. They could probably be propagated by cuttings.—Anna M. Burke, North Easton, Mass.

Where Can These Plants Be Obtained?—Can any one inform me where I may be able to purchase Azalea (*Rhododendron*) *praecox* and *A. dahuricum*. I saw plants of these at the Arnold Arboretum, but they were unable to tell me where I could get roots, and I fail to find them listed in the catalogues; also, where can *Oxytropis* be obtained.—Harold G. Rugg, Hanover, N. H.



Even in the impoverished soil and restricted conditions of an apartment house yard a good corn crop was raised by constant feeding

Soapy Water for Poor Soil.—I had an experience with a little garden last summer that I think is worth repeating because of the information that might be drawn from the treatment of this spot and which might be profitably applied to conditions similar to those which were found here. My soil was very sandy, in fact, it was this poor condition and unwillingness to spend a lot of money for manure and necessary hard work that made me reluctant to attempt the cultivation of the land. I worked very hard in loosening the soil and I planted the seeds with a faint heart, but still I worked faithfully and with as much enthusiasm as might be reasonably expected under such conditions. When the soil broke and the beans tumbled out of the soil—I should say gravel—the wonder of it all fired me with a delight that roused my interest to the highest pitch for I felt that I had witnessed a miracle. To see the great clods of earth being raised up by the tiny, tender little plants striving to reach the light really startled me and made me tremble with delight, and I said (aloud I think), that if these little seeds were willing to do such a masterful work I would be a coward not to help them. So I worked and worked, early and late, and the plants grew up to a certain point and then they seemed to stop. I knew I was asking too much and that I had not done my part in the matter of supplying nourishment. At this time a friend advised me to save all the soapy water that I could and to apply this to the ground. I lived in an apartment house and to facilitate the work of getting the soapy water to the garden with the least labor I hit upon a device which solved the difficulty. Outside each apartment on the veranda I placed an earthen pan fastened to the railing; from this I ran a hose to the yard where I had sunk a barrel. Into this barrel the water that was emptied out by the occupants of the different apartments flowed. From the time I began to apply this soapy water to the vegetables, growth was renewed, and up to the present time there has been no let up and my vegetables seem to have found in the soapy water the necessary food elements to complete their growth. The supply of water was most liberal and I applied it without stint, nothing unpleasant happened, and I feel that I can safely recommend to all those growing vegetables under poor soil conditions the advisability of using soapy water in liberal quantities.—*Minnie Boudrot, New Dorchester, Mass.*

M. Emil Lemoine, the well-known French nurseryman and plant breeder, under date of March 12, makes some complimentary comment on the *GARDEN MAGAZINE* and continues in reference to a statement about his family on page 21, February issue, as follows: "In the note 'Two Chinese Deutzias of Merit' the author states that two of my sons have been sacrificed to the European Moloch in defence of France. Fortunately for me, this is an error. Of my four sons, three are with the colours, and still alive. The second, Infantry Lieutenant, was severely wounded three times, and is still in hospital. The author has probably in mind the name of the famous raiser of Roses, M. Pernet-Ducher, of Lyons, whose both sons fell for our country." All horticulturists in America will join their felicitations to the veteran Frenchman whose establishment at Nancy, at this present writing, is so seriously threatened by the enemy.—*L. B.*

Arsenicals and Vegetables.—The ordinary garden beet of the million home gardeners may, under certain conditions, surpass in malevolent cunning and near-tragedies the never-identified persons who put ground glass in commercial canned tomatoes. I had an experience with these vegetables that is worth printing as a warning to other strivers after intensive agriculture, lest the beet overcome them and a German spy myth of mysterious poisonings disturb their friends. Young beets were coming along slowly near some rows of potatoes, tomatoes, and other tall succulent things, the leaves of which were not to be eaten. Certain army-worms, caterpillars, beetles, and insect rabble got together and began to eat for salad the leaves which I wanted to keep on my plants against the time of fruiting. I sprayed arsenate of lead on the area—and the insect rabble were no more. Weeks afterward, I cooked for the table these sneaking beets that had been huddled down inconspicuously on the day of the execution. I burned their leaves, though I could not see arsenate traces on them and thought they were of subsequent growth, for



A half barrel was sunk in the ground and connected by hose to the stories above whence soapy water was collected for the garden

fear of poisoning the neighbors' chickens, or some human lovers of "greens." Of course, one takes beets with the stubs on—and the stubs come out of a flat, rough top, scarred with ridges of past leaves. That rough top must have held dried arsenic, originally spouted down by the channelled stems of the beets' young leaves on the day I sprayed the neighboring tall plants. An hour's boiling before the beets were peeled seemingly



"A family photograph taken in the autumn of 1916, when by an extraordinary chance the three soldiers were on leave together, for only one day. Since, the officer has won a new wound, losing the use of his left arm, and a 4th star to his war cross."—*E. Lemoine*

diffused the chemical nicely through the whole vegetable. My family and I found them delicious. Those who had two portions were exactly twice as sick as those who had one portion however, so that honors are even on the score. Had I not survived to explain what ailed us all, the real criminal would not have been detected, and a respectable plot story would have grown up.—E. S. J., Penna.

Los Angeles Rose.—I do not recall during the past season having seen any particular mention in this magazine of the recently introduced H. T. Rose Los Angeles. [A reference was made in the Novelty Review last March, p. 90.—Ed.] About the middle of last October I had the pleasure of viewing five plants of this variety that had been planted in the Pittsburg, Pa., district in early April. To say that I was surprised at the growth made would be putting it mildly, the size would have been a credit to a husky H. P., many of the shoots being nearly four feet in length and correspondingly heavy, and covered with unopened buds that rivaled a Paul Neyron in size. The owner assured me that during their first blooming period in June the plants averaged better than twenty blooms. This result was accomplished by an amateur in his first attempt at growing fine Roses, and while his bed was well and thoroughly prepared, he had only the usual cultural directions to guide him.—E. A. W., Pa.

A Good Way to Get Early Potatoes.—In Mr. McCollom's article on "Potato Culture" in the GARDEN MAGAZINE for March he does not refer to a method of starting potatoes I have seen practiced in the market gardens around Boston more than forty years ago. I tried it myself last year with excellent success, and I shall try it again this year. We had a very late and wet spring last year and when the work could be started, it all came in a rush. I could not get my ground ready in time so I thought of the way I had seen potatoes



Goldberg in (N. Y.) Mail

The Army of Feed-Allies-All

The Lanciers of tasseled Corn are flashing sabres green,
And fashioning projectiles in projectile-cases green,
Beside the golden Wheat Brigades—a mighty-bannered throng
That's marching to the cadence of the reaper's magic song.

And heavy-larded Hog Hussars are guarding on the flanks,
Where all the Garden Infantry have rushed into the ranks,
Equipped to fight with poison fumes and can grenades and hoe,
And reinforced to feed themselves to beat a hungry foe.

And see the Crimson Cavaliers and Clovers White and Red,
Marshaled in the valleys where the Bovine Legions tread
To Aggie Culture's urging and her natural command
For everyone to plow and plant and cultivate the land.

From Dixieland the Cotton Guards in phalanges arise
To greet the summer sunbeams that are reaching from the skies,
And weaving snowy banners in the dreamy Southern air
For bandages of mercy for the legions over there.

Old General Necessity's at work with all his strength
Erecting rural battlements to help us win at length;
But—now the order's given, "Man the Silo-metre gun";
The battle of Feed-Allies-All has finally begun.
—LITTLELL McCLUNG.

handled at home. I had plenty of glass so I cut the potatoes in the usual way, two eyes to a piece, worked over a bed six feet square for two frames of glass, raked it over and used a little sheep manure. I laid the potato pieces over this surface as closely as possible, so the bed when done was completely covered with potatoes. I then sifted an inch of good soil on them and put on the glass. In a week they were coming through, and in two weeks they were eight to ten inches high. I had the ground ready by then and after spading the rows, eighteen inches wide, the full depth of the spade, I lifted them from the bed with a fork, laid them in baskets and then transplanted them in the field. They never wilted; each piece of potato was a mass of roots and did not show effects of moving at all. They began to grow at once. I planted some Green Mountain potatoes the usual way and I could see no difference in the yield. This is a good way to get early potatoes or to get them started before the land is ready. It is also a good way to start peanuts and insures a crop in this latitude. Sweet potatoes may also be started in this way.—J. P. Poland, Springfield, Mass.

Luther Burbank has written a splendid survey of the part the home gardener plays in America's herculean task of assuming responsibility for meeting the food needs of the world next year. This will be published in the August GARDEN MAGAZINE and will be appropriately illustrated in a special cover design entitled: "Over Here and Over There" by Frank Spradling. Plans for next year's campaign must be made now, when we are harvesting the results of 1918 and really have our foot on the threshold of the work for 1919.

INDEX TO VOL. XXVII. The semi-annual volume of the GARDEN MAGAZINE is completed with this issue. An index to contents has been prepared and will be sent gratis on request. Subscribers who so desire may have their copies bound in cloth at a cost of \$1.25.

Calories in Cans

How Much Should Be "Put Up" For a Family?

DID you know that you were growing calories in the strawberry patch, on the cherry trees and the tomato vines? We seldom think of fruits and vegetables as "energy foods." We count on them rather for their health promoting qualities. But there are some calories (units of energy) tucked away in the string beans, sugar corn, luscious blackberries and red currants. And occasionally it is a surprisingly large number of calories. In fact experts have estimated that, if put to it, one could get about a third of all the calories one needed out of fruits and vegetables.

The best part of this potential energy out in the garden is that it can be stored and used at will when the season is past. The storage battery is a plain glass jar, the process is commonly known as either the "open kettle," or the "cold pack," the repository is the shelf in the basement store room.

How much of that energy, in common everyday terms, shall you count on storing up for your family of five? A good assortment would be 3 quarts of fruit, 2 quarts of tomatoes, and 3 quarts of other vegetables for every week of the canned-goods season.

That season we may estimate at about from the first of October to the first of June. Let us figure up.

October 1st to June 1st = 32 weeks
32 x 2 = 64 quarts of tomatoes
32 x 3 = 96 quarts of other vegetables
32 x 3 = 96 quarts of fruit

Or let us say in round measures, 65 quarts of tomatoes, 100 quarts of other vegetables, 100 quarts of fruit. It must be remembered that sugar is used in canning fruit, and that brings up considerably the calorie value of a quart of fruit. On the other hand it is not unfair to estimate this as energy actually put away for future use, because when one takes down a jar of fruit from the shelf, it is used "sugar and all." A can of vegetables on the other hand relies only on the original amount of energy contained in the vegetables.

The following are approximate figures for quart cans of fruits and vegetables.

FRUITS			VEGETABLES		
Apples	1,560	calories	Asparagus	170	calories
Apricots	680	"	String Beans	190	"
Blackberries	1,870	"	Lima Beans	960	"
Blueberries	550	"	Corn	910	"
Cherries	830	"	Peas	510	"
Peaches	440	"	Pumpkin	300	"
Pineapple	1,430	"	Squash	570	"
Raspberries	1,870	"	Tomatoes	210	"
Strawberries	920	"			

Your choice may include:

Your choice may include:		This will mean:	
65	quarts tomatoes	13,650	calories
25	" corn	22,750	"
25	" peas	12,750	"
15	" asparagus	2,550	"
15	" string beans	2,850	"
10	" lima beans	9,600	"
5	" pumpkin	1,500	"
5	" squash	2,850	"
25	" strawberries	23,000	"
5	" apricots	3,400	"
15	" apples	23,400	"
20	" cherries	16,600	"
15	" peaches	6,600	"
10	" pineapple	14,300	"
5	" blackberries	9,350	"
10	" raspberries	18,700	"

This will make a total of 183,850 heat units stored up for the winter. The normal requirement of an individual ranges from 1,000 to 2,000 calories a day, according to circumstances.

It might be worth while to label each jar as it is put on the shelf according to the actual amount of energy producing material which you know has gone into it. The number of calories per pound of any fruit or vegetable can be found by consulting Farmer's Bulletin No. 142 which may be obtained on request from the United States Department of Agriculture, Washington, D. C.

THE MONTH'S REMINDER, JULY, 1918

The purpose of the Reminder is to call to your attention the things which should be thought about or done during the next few weeks. For full details as to how to do the different things suggested, see the current or back issues of THE GARDEN MAGAZINE. (An index of contents is prepared for each completed volume, and is sent gratis on request. The READERS' SERVICE DEPARTMENT will also cite references on any special topic if asked.)

KEEP the succession crops growing, remember, that one batch of beans or sweet corn that you can eat is worth more than three that get so old that they can't be used on the table. Sow little—just enough—and sow often! No need to wait 'til the ground is cleared. When things are in good shape for planting, after a rain, loosen up the soil between the rows of vegetables that are nearly through and start the new crop in the furrows.

July is the month for transplanting for fall and winter. Cabbage, Brussels sprouts, kale, cauliflower, celery and so forth, started last month should be put out now. Watch your chance to get them in just after a good rain—unless you have irrigation and are independent of the weather.

Firm plants in well. Transplanting at this time of the year is, of course, much harder on the plants than when done in the spring, unless the greatest care is used. If ground is very dry, put water in the hole, before inserting the plant (not on top after setting plants). Let water soak away, put plant in place, cover with the lightest soil available, and firm down hard. Remove two thirds or so of the large outside leaves. Transplant on late afternoons or on a cloudy day.

Keep Up the Mulch

EVEN if you have got the best of the weeds in your garden, don't stop cultivating. Keep the rake or the rake attachment on your wheel hoe going frequently enough to prevent the formation of a crust. Have you looked into the possibilities of some of the newer tools for weeding and cultivating? They are really worth while—we have tried them and we know.

The dryer you keep your soil on the surface, the moister it will keep the seed below! Remember, the amount of moisture in the soil determines the size of your crops. Mulch with manure and grass where possible. Spent, old manure from the hot beds, or the remains of the winter mulch for the flowers or shrubbery, grass clippings and so forth may be used around egg-plants, cauliflowers, or other vegetables which are most particular about the amount of water they require.

Keep 'em Picked Clean!

DON'T let any maturing vegetables get away from you. Pick everything as soon as it is ready even if you cannot use it at the table. If you are ready to can or dehydrate these small surplus quantities can be saved. [See GARDEN MAGAZINE for June for full details.] Even if they can't be, it is better to pick them and to give them away than to let them stay on the vines. This is particularly true of such things as cucumbers, summer squash, beans and other vegetables which will cease producing as soon as they are allowed to mature seed.

Spray—Spray—Spray!

THIS is the time of the year when insects and diseases do most damage. It is bad enough to lose a crop when it is just starting, but much worse to lose it after you have got it three quarters grown! Protect your plants by ample and timely spraying. Don't wait for the trouble to get a start. Watch your gar-

den daily and be prepared to spray within ten minutes after you see the first sign of trouble. Delay is not only dangerous but fatal. Remember the standard remedies—40 per cent. nicotine, ("Black Leaf 40") for sucking insects—arsenate of lead for chewing insects—bordeaux mixture for fungous plant diseases—special dust on preparatives for food crops eaten in bulk. Keep them all on hand, ready for use.

Next Year's Asparagus

MAKE sure of next year's asparagus now. The treatment your bed receives this summer and fall will determine what kind of a crop you will have next year—make no mistake about that! After the last cutting let the tops grow and thoroughly spray with arsenate of lead to control the asparagus beetle and with bordeaux mixture to ward off any attacks of rust. A dressing of bone dust or manure after you stop cutting will help the development of the crowns.

Get Your Fall Salads Started Now

REMEMBER that there will be several weeks of cool weather in the fall, when lettuce, endive and other salad plants will thrive well if they have been sown early enough. Started in a frame or in a moist shady seed bed early in July, they will be big enough to transplant when the hot weather is beginning to wane. It is a little bit early just yet to start the fall varieties, but it is time to order the seed now. For present planting use Salamander or some other summer heat resisting variety.

In the Flower Garden

DON'T stop spraying when you reach the flower garden! Examine all the flower beds for any sign of trouble just as thoroughly as you do the vegetable garden, and get on the job with fungicide or insecticide just as quick. The special "package goods" offered by the trade will be found very serviceable here. They are convenient and effectual.

Mulch where possible. A summer mulch in the flower garden, especially where there are

late flowering things, is often the difference between success and failure. Most flowers will bloom, after a fashion, even in a dry soil—but for really fine big blooms, and plenty of them, plenty of moisture is imperative. So mulch between the plants wherever you can.

By that same token, the dust mulch is just as important for Geraniums and Balsams as for beets and garden sass! Get a modern cultivating hoe or rake, with adjustable teeth, and work the soil between the plants.

Top dress the things that are still to flower. Without a lusty growth of vine and leaf, the blooms will not be at their best. A very light application of nitrate of soda, or better still the new nitrate potash combination (that has 15 per cent. of potash in addition to as much nitrogen as nitrate of soda) will do wonders for lagging plants. Use with judgment of course; it is possible to get such a rank leaf growth that flowers will be few and poor. Many people feed too rich for Nasturtiums and for Lupins, for instance—more blooms and better colors if nitrogen is a little shy.

Ply the hose freely, as well as apply the hoes. When in doubt, or when ever there is time, water. Better still, get a small portable irrigation outfit. Then you can do the water business right; until you do, you can't. Don't merely sprinkle the surface occasionally; that is worse than not watering at all; what you can get at with the hose, soak thoroughly.

Keep picked clean. Do not let the fading and dead blooms stay on the plants. If seed pods form the flowering season is cut short. Use the shears, even if you cannot use the flowers.

Start perennials. The earlier the better and the stronger they will be to go through the winter. And—if anything goes wrong with the first sowing, you have time to try again.

Prune Rambler and Climbing Roses that are just through flowering. Cut back old canes and form the framework for the rest of the season's growth; keep trained carefully. On this new wood next year's blossoms will be borne.

Small Fruits

HIGH time now to think about starting the new strawberry bed. Order your plants early from the dealer; or grow your own. Pick out the best in your present bed, or in your neighbor's old bed. Secure three inch pots. Spade up soil. Bury pots to rim as runners start, and hold in place over pot with clothes pin or small stone. Or buy potted plants. Make the bed now, three or four weeks in advance of planting time. Enrich thoroughly. Prune cane fruits as soon as harvest is over. Cut old canes back to ground to give room to the new growth. Leave only three to five of new canes.

Spray gooseberries and currants, especially former. If you have not had success with former, make note to try mildew-resistant varieties next year. Order now for early fall delivery.

Don't let sod grow around currant and gooseberry bushes. To get good fruit, you must give cultivation. So also with cane fruits and rhubarb. Clean the beds out now, if they have begun to get "wild." The sod will be valuable in your compost heap, or in a sod pile for greenhouse soil.

SUGAR FOR CANNING

Although the Food Administration hopes that there will be sufficient sugar to meet all needs, it is guarding against avoidable hardships that would follow a sudden curtailment of Cuban shipments.

In order to meet the canning demand, distribution will be under a modified certificate system insuring those having a surplus of vegetables and fruits that they will be able to conserve them, and at the same time preventing others from using fictitious canning demands as an excuse for hoarding.

Retail dealers will be provided with certificates which must be signed by all who wish to purchase in quantities greater than are needed to meet normal household needs. The signatures are virtually pledges that all sugar so obtained will be used only to preserve perishable foodstuffs. The pledges must be returned within a week to the Federal Food Administrator for the state in which the sugar is purchased, thus enabling the Food Administration to keep a close check upon distribution and in many cases to detect falsification.

The restrictions are not taken with a view to curtailing home canning, but rather to encourage the greatest possible preservation of foods which otherwise would be wasted.

On the Trail of the Slacker

When the Beginner Needs an Urge—Midsummer Work in Following Up

CONSTANT and deep cultivation is most important during the hot dry weather of summer. Shallow cultivation may be practised during good growing conditions, but deep cultivation is necessary in excessively hot, dry weather. The point is sometimes raised that this disturbs surface roots, but where proper cultivation is given to the garden, few, if any surface roots will be found, due to the fact that *cultivation drives the roots down* into the soil. Constant working of the soil prevents the starting of any weed growth and also reduces to the minimum the necessity of artificial watering.

In well maintained gardens a top dressing is given to the vegetable crops at this period, particularly to those which remain in the ground for the entire season. It is often asserted that a top dressing encourages surface rooting, but this is far from the fact if the soil is *constantly worked after the dressing has been applied*, as the rains wash down the fertility and convey it to the roots. Sheep or other concentrated manures, such as guano, may be used; or some of the commercial fertilizers which are mostly composed of dried bone and blood; or chemicals which are quickly soluble. In some cases nitrate of soda can be recommended, but it should be used sparingly because of its great concentration. The danger to the inexperienced gardener with strong chemicals is because of a tendency to use too much. It is easy to overdo a good thing.

Another detail of the moment is the hilling of such crops as grow tall and which a little later in the season are liable to be injured by wind or heavy rain storms. The hilling at this time is done as a preventive or protective measure. Corn especially needs this kind of attention.

Sowing for Fall

TOO early to think about fall when the summer harvest is just begun? Not at all! Remember the successful gardener never forgets that the first and most important step in garden success is the *sowing of the seeds*. Though he may have a very hazy idea of how he is to care for those seeds when they grow into plants, he figures that crossing bridges is best considered when they are reached. The great principle is to get started with each crop. *All root crops for winter*, such as beets, carrots, rutabagas, yellow turnips and winter radishes should be sown now. If the ground has been previously cropped, fertilizer of some kind should be worked into the ground; well rotted manure is preferred because the season ahead is getting shorter. Corn can still be sown, using early varieties. Peas, spinach, and radishes can be sown successionaly from now until September. Lettuce, endive, and cress are also seasonable.

Seeds and Germination

DO YOU complain that seeds do not germinate well at this season of the year? That may seem to be so but is not actually due to the seed but is caused by the *dryness of the soil*. Seeds require moisture, heat and air for germination. Therefore in the summer season when the soil is dry it is good practice to thoroughly soak the drills with water before sowing the seeds. But do not soak the seed before sowing if the soil is dry since the young

plant would then be falsely induced to start out its independent life.

Watering Reasons

OF COURSE the ideal conditions for seed sowing and for crop growing all through would be enough rain to finish growth of crops without the necessity of artificial watering. That is a splendid theory but in actual practice we are forced to resort to artificial watering. A mistake too often made is applying "just a little" water at frequent intervals. The water, practically all on the surface, is quickly evaporated and the plants are left in a far worse condition than if they had received no water at all. When plants do require water, give enough to *thoroughly saturate the ground* and then work the surface just as soon as it dries sufficiently to pulverize underneath the cultivator.

Where overhead piping is not used, some scheme should be worked out whereby the water is somewhat tempered before it strikes the plants, as cold water coming into contact with the plants gives a shock that renders them liable to mildew and other undesirable conditions. That is one of the most important advantages of irrigating systems, as in most cases the pipes are overhead and the water is so finely divided that the air thoroughly tempers it, and falling in very small particles it sinks into the earth very gradually, which is the ideal condition.

Irrigation—Different Methods

THERE are several systems of irrigation. One is a portable affair that can be carried about the garden and, considering its good points, is quite inexpensive. The pipe can be regulated to distribute the water at any angle desired. This same method is employed on a large scale when the pipes are placed overhead so that plowing and other garden operations can be carried on underneath. In another system the pipes are placed underground with risers or jet nozzles placed equidistant apart. This system is by far the most sightly, but has the disadvantage of having the pipes underneath the ground. One of the chief benefits of a proper irrigating system lies in the starting of newly set crops, especially plants that are set out from seed beds, such as Brussels sprouts, cabbage, cauliflower, etc.

How to Pick Vegetables

THE harvest is here! The facilities that are available for the proper canning of the garden produce leave little excuse for the waste of any crop. The average home garden is indeed a mint if properly looked after, but we are so apt to consider the garden products at their cost to us, which, to be sure, is very small, instead of *at their value in the house* which is vastly different.

Make a practice of gathering your vegetables daily. If conditions are such that you are not able to can those that are not for immediate use, they can surely be disposed of where they will be welcome. Though there is nothing to be gained by picking vegetables too young, there is, on the other hand, a great deal to be lost by allowing them to become too old; and at this season of the year all vegetables mature rapidly.

Gather corn when the silk is well browned and the top of the ear firm. Never allow

artichokes to develop the pod before they are gathered. Tomatoes should always be used when firm as they will invariably crack if left on the plant. Potatoes will now be ready for digging; but gather only enough for immediate use as they continue to improve in the ground. Cabbage will split and become useless if not used. Boards placed over the lettuce to shade it will reduce the percentage of the plants running to seed. Romaine or Cos lettuce should be tied up several days before using, first making sure that the plants are thoroughly dry.

Selecting Types and Rare Seeds

MANY of the improved varieties of rare vegetables are the result of accident. In every garden there is the possibility of developing a very superior strain of any vegetable, but if the special quality is not recognized and the improved type saved for seed purposes, nothing will be gained. Here is an opportunity for every home gardener. If you have a particularly fine ear of corn, for example, one that shows only a little different habit from the ordinary plant, it is advisable to allow it to mature for seeding purposes. It is by no means outside the possibilities of a small garden to develop an improved type that will be well worth the effort and which may ultimately add to the value of the nation's gardens.

The regular seed grower, raising stock for the seed trade, aims to reproduce true to type and consequently he has, as a matter of business, a tendency to suppress variations or deviations from the accepted standard. The home gardener stands in a different relation and here opens a fertile field of possibilities.

To cite an instance of seed selection: In one case, the earliest and best flavored type of muskmelon was selected for seed purposes for a period of eight years. Care was exercised that the specimen selected was from a healthy and vigorous vine, which had proved its productiveness. A gain of fifteen *days was made in the ripening period*, or an average of almost two days per year! The melons were true to type and all that could be desired in flavor. Saving of seed from any specimen of unusual perfection or development, is not only possible, but it should be practised in every home garden; in this way new and improved strains and even new varieties may be developed.

Planning for Next Year

THIS is the proper time to make a few records that will be of material benefit for next year's garden. Prepare a garden book and mark down the varieties or more particularly the *types* you prefer. Do it now, while the matter is fresh in your mind and the very types are in your garden and can be examined. Do you like a long beet or a round one; a white corn or a yellow corn; a small pod bush lima or a large pod type; a buttery head lettuce or the curly non-heading type; a stump rooted or a long carrot? Now is the proper time to ask yourself these questions, and if you make your decisions and record them in your garden book, they will give you invaluable information for next spring. Always carry with you into the garden a fountain pen or pencil and handy record book.



Now is the time when the slacker is uncovered; crops need persistent attention in cultivation and weeding



Gather the harvest as fast as the crops mature, and this is especially true for the home garden where quality is largely a matter of will

THE GARDEN MOVIES, No. 7

The problem of midsummer is keeping up with maturing crops and sowing seeds for succession



Transplant carefully now; seeing that the roots are in firm contact with the soil. Then water and shade for a day or so



Keep up the defensive warfare against the insect hosts. Dust a non-poisonous insecticide on green leaf crops

Harvest everything as soon as ready. Keep crops moving and the ground constantly occupied



Annual plants cease to bear just as soon as they mature seed. Keep the vine picked over even if you cannot use the produce



Press into service old berry baskets, cartons, shingles, etc., to shield newly transplanted rows. The shock of removal is great



Water the rows before seed is sown. Bad stand in midsummer is usually due to lack of adequate moisture



Clear out all rows just as soon as they have reached their maximum of yield and use the ground for a succession crop.

Saving Seeds from the Home Garden D. F. JONES

The Individual Gardener's Opportunity to Help with the Seed Situation

WHILE the seedsman to whom we are so deeply indebted for the production and maintenance of the greater number of our present excellent varieties must always be the main reliance for the bulk of our seed supply, yet the crops now maturing in the millions of home gardens may well be conscripted to contribute their bit in certain lines. It is practical to grow seed of some plants in nearly every garden; and this seed is as good as can be obtained elsewhere. However, the difficulty of producing seed from many kinds of plants and the extra time, trouble, and space required render the saving of seed from the garden inadvisable under most conditions. But failures of many seed crops in the seed growing districts make it appropriate at this time to direct attention to any means of economizing on seed.

The supplies of spinach, beet, cabbage, cauliflower (and allied plants), and celery, are unusually low. The production of bean seed which was extremely poor in 1916 was still poorer in 1917. Last season many of the California crops were cut short by untimely dry weather. Particularly is this true of radish seed. Sweet corn was badly injured by frost in the fall of 1917 and the present supply is consequently influenced. Shortened supply and an increased demand in 1918 have culminated in an actual scarcity of particular lines.

The High Cost of Gardening

AT THE outset it is well to remember that a seed saved is as good as a seed produced. The careful Hooverizing of left-over lots of seed and storing in vermin-proof containers should be practised by everyone. The total loss of garden seed from leaky packages and from damage by insects and mice would be appalling if the actual amount could be determined. Peas, beans, and corn which are often destroyed by weevils and moths can be mixed with air-slacked lime and stored safely without fear of damage from these pests or injury to the seeds.

Plants from Which Seed May Be Saved in the Garden

AS TO the plants from which seed can and can not be saved in the garden the classification depends largely on whether or not they as a rule are naturally self-pollinated or cross-pollinated. Self-pollinated plants come true to seed and are unaffected by other varieties grown adjacent. For this reason they are the kinds from which it is safest to save seeds in the small garden, provided, of course, fully matured seed can be ripened. Plants of which the seed is either all of, or contained in, that part of the plant eaten, and which are regularly self-pollinated, are all suitable

for the home production of seed. In this list are the following plants:

Peas	Lima Beans	Peppers
Beans	Tomatoes	Eggplant

These are grown in practically every garden. I make a practice of saving seed of all these except eggplant, and see no reason why others cannot profitably to likewise. When picking peas and beans there are always a few over-ripe pods. These are left on the vines and at the end of the season the plants are gone over and these pods saved, dried thoroughly, and shelled, the largest seeds being saved for planting. Due to our many rains these seeds are never as bright or handsome looking as the Montana or California grown seed; but they grow,



The ear at the top shows the result of crossing of sweet corn by field corn pollen. The crossed seeds are immediately apparent. The sweet, wrinkled seeds can be separated and planted without fear of their being affected by the field corn

ripen just as early, and produce just as well as the same varieties obtained anew from the seedsman. In the accompanying illustration two varieties of peas from garden grown seed are seen growing alongside the same two varieties of which seed was purchased.



Plants of the squash and melon family furnish their own bags. It is only necessary to fasten the tip of the flower so that it cannot open. The flowers are of two kinds: male and female. Pollen should be applied when the flowers reach the development shown in the two outer flowers. Both kinds of flowers are borne on the same plant but cross-fertilization between different plants of the same variety is necessary for greatest vigor

The first picking of the first variety to ripen was made on the Fourth of July. There were no significant differences in yield throughout the season.

Guard Against Occasional Pollination

WHILE all the plants named in the above list are regularly self-pollinated occasional crossing does take place and must be guarded against by rigidly rejecting all

off type plants or seeds which are usually quite noticeable. In peas and beans cross-pollination takes place very rarely, and in tomatoes in about two per cent of the seeds produced if many varieties are grown close together. Since a large amount of seed is produced in each fruit of the tomato or pepper it is a simple matter to enclose a blossom cluster in a paper bag before the petals show and pollinate the flowers by hand a few days later. In this way an abundance of seed is secured without any danger of cross-pollination.

The only work involved in saving seed of tomatoes and peppers is in the cleaning of the seed in the case of the former. This is easily done by allowing the fruit to become slightly fermented but not moldy. Squeeze out the pulp and wash the seeds in a vegetable strainer. Soaking the seeds in rather strong lye solution removes the mucilaginous coating and keeps the seeds from sticking together.

Choosing the Plants

WHEN selecting for seed the whole plant should be kept in mind and not individual fruits. It makes no difference whether the fruits are borne early or late on the plant as long as the seeds inside are well developed.

When saving seed from plants which are more or less regularly cross-pollinated more caution is necessary. It is only advisable to save seed when only one variety of each kind is grown or allowed to flower at one time.

If crossing with other varieties is prevented seed may be saved from the following annual cross pollinated-plants:

Corn	Spinach	Watermelon
Radish	Cucumber	Squash and
Lettuce	Muskmelon	Pumpkin

Though sweet corn is one of the most widely crossed plants grown yet seed from it can often be saved in the garden. There is no difficulty, if only one variety is grown to flower at a given time. But corn pollen is carried several hundred yards by the wind and longer distances by birds, and crossing should be looked out for. Fortunately much can be done in this respect. Any sweet corn seeds that have been pollinated by field corn are smooth and starchy like field corn, so sweet corn can be grown adjacent to field corn with impunity as far as saving seed from the sweet corn is concerned.

The scattering starchy seeds on the ears can be discarded and the remaining wrinkled seeds will in no way be affected. Of course the quality of the corn for eating purposes is impaired if many starchy seeds are present so that the practice of planting sweet corn as far away from field corn as possible is perfectly justified.

If two varieties of sweet corn are grown near each other the crossing that will surely take

place can not be detected except when a white seeded variety is grown with a yellow or purple variety. In that case any crossing of the yellow or purple on the white shows up at once in the production of colored seeds.

Saving Seed of the Melon Tribe

ALL the varieties of cucumbers, of melons, or of squashes are widely crossed among themselves; but no authentic case of crossing between these types, *i. e.*, of melons with cucumbers, or either of these with squash or pumpkins, is known in spite of frequent statements to the contrary. Melons, cucumbers and squashes can be grown side by side without the slightest danger of either the fruits themselves being immediately affected or the resulting plants grown from the seed saved from their fruits being unidentified.

The different *varieties* of melons or of cucumbers will cross quite readily *among themselves* and for that reason it is usually not advisable to save seed from these plants. Where only one variety of each is grown, however, seed can be saved from healthy plants. In the case of cucumber and summer squash the fruits must be allowed to ripen. Even when a number of varieties are grown together the flowers can be protected from insects and pollinated by hand.

Plants Not Adaptable for Home Seed Production

RADISH, lettuce and spinach offer some difficulty since these plants are usually grown as in-between crops and are in the way when allowed to go to seed. Well developed roots of radish can be transplanted to a more convenient place. They will produce seed abundantly in almost any part of the country if the plant lice are kept off. Both spinach and lettuce must be allowed to go to seed where originally planted. The plants must be well cared for in order to insure plump well developed seed. Although it is some little trouble to grow seed from these plants they set seed abundantly and from a dozen plants enough seed can be gathered to last several seasons. Practically all of the spinach has formerly been imported.

Plants Requiring Two Seasons

A CERTAIN number of plants which are grown as annual vegetables are really biennial and will not give seed till the second year of growth. Among such, which are also cross-pollinated are:

Beet	Celery	Onion
Carrot	Turnip	Salsify
Parsnip	Cabbage	



To guard against the possibility of any crossing taking place enclose the flower cluster (tomato) before the petals show color. Pollen must be placed on the stigmas a few days later. The point of a knife is the best means

Many of these offer so many difficulties in the way of growing seed that it is hardly worth while for the average gardener to attempt them. Beet, carrot, and parsnip seed is not hard to grow however. The roots must be carried over winter without sprouting or wilting badly. About three fourths usual sized roots are selected and started to sprout before setting in the ground. Planting in rows three feet apart and six to eight inches in the row gives well developed plants which seed abundantly. Enough should be obtained from a dozen plants to last as long as the seed will germinate well.

All the plants in this last list are widely crossed. Fortunately they are seldom seen in flower so that one variety of each can be grown at a time with little danger of being crossed with other varieties in neighboring gardens. Cultivated carrots will cross with the wild plants so abundant in New England and the latter should be kept cut down.

Prevention of Inbreeding

WHEN growing seed of any variety of plants which is widely cross-pollinated it is necessary to grow a number of plants so that

inbreeding does not take place. The naturally self-pollinated plants are of course always inbred so that seed may be saved from only one plant as well as from several.

The flowering plants which are so attractive on account of their beauty and fragrance likewise attract bees and other winged visitors; consequently most of our garden flowers are widely crossed. The Sweet Pea is one noticeable exception. If a mixture of colors is undesirable the saving of flower seeds is not to be encouraged. Otherwise there is no reason why seeds can not be saved from many plants which ripen their seeds well.

The Functions of a Seed

ONE purpose of a seed is to transmit from one generation to the next those inherent hereditary qualities which are characteristic of the variety. The other function is to store up a supply of quickly available food to start the young plant in its new environment. The failure to distinguish between these two functions leads to confusion. We should always select the largest, plumpest, and brightest seeds possible because such seeds have the best store of food and consequently give the young seedlings the best start. For this reason the corn grower discards the butt and tip seeds from the ear. The bean and pea grower rejects the little seeds from the pods. For the same reason the California grown seeds are popular because the seeds are well grown, plump, bright, and germinate well. But the condition of a seed, as long as it will germinate, is relatively of less importance as compared to its hereditary qualities and possibilities.

Poor seeds from a good plant are better than the best seeds from a poor plant although the latter may look superior. Because the seedsman cannot give to individual plants the careful selection that the gardener can give the latter can often produce better seed from certain plants than the seedsman can supply, although the gardener is handicapped because he can not always grow his plants in those regions which are best adapted to the growing of each particular seed crop.

In the garden-farming districts about the larger cities many growers regularly produce their own seed. The market gardeners around Boston largely raise their own seed of celery (their most important crop), lettuce, beets, tomatoes, and cucumbers. Particularly is this true of crops grown under glass.



At the left are two varieties of peas grown from seed saved from the garden the previous year. At the right are the same two varieties from purchased seed. Planted at the same time and treated exactly alike



Tomatoes are rarely cross-pollinated. In some cases, as shown here, the crossed seedlings can be easily detected. (See upper right hand corner of the picture.) This is so when dwarfs are crossed with standard plants

Canning Conveniences for Canny Housekeepers

EFFIE M. ROBINSON

THERE is keen joy to the true "housewifely" heart in having sufficient and appropriate utensils at her service in her most important work of keeper of the health of the nation. Particularly during the canning and preserving season, when time is of great importance, every effort should be made to accomplish the best results with the least amount of labor and inconvenience. Your directions for canning, by the universally used one-period cold-pack method, and your time table for sterilizing [see JUNE GARDEN MAGAZINE] should be tacked on the wall in your kitchen where you can easily see it while you are working.

All your utensils must be ready to use before you begin work; also, I suggest that you muffle the telephone! And keep your engagement book clear, as interruptions are fatal to successful canning.

Necessity the Mother of Invention

MAKESHIFT sterilizers answered the purpose for which they were intended fairly well before the need of canning and drying became so great; but now one has no right to waste time and energy in made-over articles when the new tested and proven ones are ready and the urgency for quick work is so great. Dealers have risen splendidly to the occasion and there are now on the market sterilizers of reliable make for any method that you wish to use.

Hot water bath outfits can be bought at really small cost. There are several styles. One is like the ordinary wash boiler, or ham and fish kettle, fitted with a rack made to hold from four to about twelve jars, with

handles, so that you can lift all the jars out at once. They cost from about \$3.00 for the outfit holding four jars up to about \$12.00 for twelve jars. The prices vary a little according to the weight of the metal used. If you have to buy a new wash boiler why not get one with the rack complete at the cost of about two dollars more than the washboiler alone would cost. Those home-made racks we used to make were seldom very satisfactory.

Another hotwater bath outfit is a combined steam cooker and canner. It is made in a series of compartments one above the other with separate doors so that different things can be cooked at the same time. Water can be added while the canning is going on without opening the doors of the compartments in which the jars are placed. It is fitted with a whistle that sounds when more water is needed, to prevent the bottom being burned out. This cooker has the advantage of being available for use all the year round. In it you can cook anything that can be cooked by steam. Only one burner of the gas or oil stove is used.

There are water seal outfits which are desirable as the period of sterilization is shorter and so less fuel is required. These are fitted with an outer and an inner container and a wire crate for the jars; also a thermometer which registers temperature—it should go to above 212 degrees F.

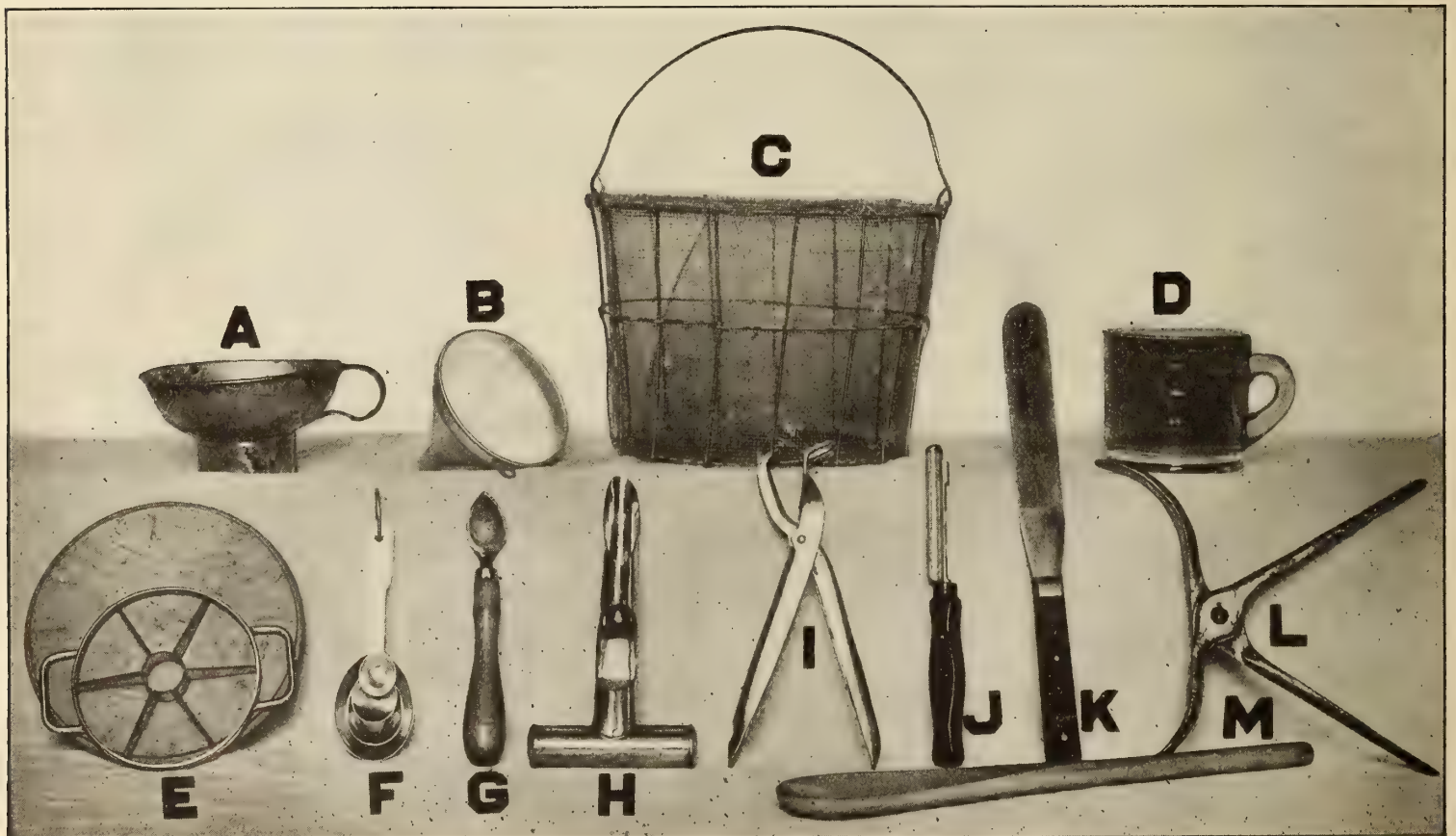
Steam pressure outfits do the canning very quickly because it is done in steam under pressure of from 5 to 30 pounds. All these sterilizers are made in small sizes for family use and in large sizes for community work.

Being on the subject of preserving utensils brings to my mind another method of saving

fruits and vegetables. That is by Drying. Food drying is most useful as very large quantities can be dried with very small expense and trouble. A thoroughly practical food drier is made somewhat like a hot-water plate. It has a container for water and a large flat surface for drying food. There are two sizes now made, one 18 x 26 in. which enables you to dry as much as two bushels a day; and a larger one 24 x 36 in. which has a capacity of four bushels in a day. This drier is useful in jam and jelly making also. It acts like a double boiler and keeps the things from scorching as they will so quickly over a fire.

Paring, Pitting and Pressing All Provided For

EVERY convenience is thought out for your comfort during the preparation of the foods. There is a new vegetable scraper, a rough stone with a handle. It is used something like a vegetable brush. You know you have to scrub the vegetables clean before preparing them! Well, this little article scrubs the skin off; that's all! It can be used for almost any fruit and vegetable and saves an immense amount of waste. If you are peeling potatoes yourself it will save you a quarter of the potato and if your maid is peeling them it will save half! If you prefer knives anyway, there are many to choose from. Some are marked with the name of the particular vegetable for which they are intended, such as potato, onion, etc. And there is a new glass knife, handle as well as blade, for acid fruits. A curved knife for grapefruit and oranges is useful even if you are not canning them! There is a combination pineapple eye snip and cherry pitter. This, of course, takes



Some desirable accessories for the canner as collected by the Missouri Agricultural College. A. Jar filler. B. Funnel. C. Wire basket. D. Measuring cup. E. Apple corer. F. Measuring spoons. G. Peach seeder. H. Apple corer. I. Hot-pan lifter. J. Peeler. K. Spatula. L. Jar lifter. M. Wooden spoon

some time to use so I suggest that if you are to can or dry a large quantity of cherries you get a cherry pitting machine. This is worked by simply feeding the cherries in and turning a handle. For large quantities of apples it is better to use the combination apple parer, corer and slicer. Other handy vegetable tools are a beet slicer, and various cutters for cutting vegetables in fancy shapes. Of spoons there are many, from the new ones made to use once and throw away to those hooked to the preserving kettle so they won't get lost. Jar lifters adjusted for holding the different sizes of jars are really indispensable and save one from many a scalded hand. Wire baskets in which to place your vegetables or fruits for blanching and cold dipping are to be had in small and large sizes. Some people prefer to use these in place of cheese-cloth.

For putting up jams and jellies the prettiest paper jars are made—they are paraffin coated and prettily decorated. Some I saw were only 35 cents a dozen. Glass or tin is not necessary for jelly or jams because the amount of sugar they contain helps to preserve them. A jelly bag with a wooden holder that slides down and presses the juice out of the fruit is a good discovery. It saves you from getting



The things that are really necessary. A. Measuring cup. B. Tablespoon. C. Fork. D. Paring knife. E. Teaspoon. F. Cloth for blanching and cold dipping

your hands stained with fruit juice. Another jelly bag has a wire frame that clamps on to the bowl with the bag suspended well above the bowl. While still another fits the back of any kitchen chair, suspending the bag above the pans. There are also metal and wood presses for pressing the juice from fruit for grape juice and other drinks and jellies.

Your Useful Rubber Rings

RUBBER rings are *not* useful if they are old and springless. They should spring back into shape again after being folded in half or stretched. Nearly all the "spoilage" in jars of food has been caused by defective rubber rings having been reused. Buy new rubber rings every time at a few cents cost and save many jars of food at many dollars cost. The rings are sold in packets of a dozen, wrapped in waxed paper to keep them from the air.

Save What Strength You Have

WOMEN are not very strong physically—so they say. "Yet a women can put a lid on a fruit jar so tightly that it would take a Hercules to get off again."

That's a pretty true saying and I would suggest that instead of trying to out do Hercules you buy one of the new jar-openers that are being offered at the stores now. There are several makes so that you can get one that will suit both your jars and your pocket too.

Ready prepared and named labels are sold by the dozen ready to fasten on your jars and containers. Everything has been planned to make the work easily and quickly done and all advantage should be taken of these labor savers.

Experiences in Midsummer Transplanting

ALL gardeners, both of commercial and of "for pleasure" ends, have the seedlings of some plants to reset—transplant—during the two hottest summer months (July and August), and the drouth inclinations of these two months make it impractical to hold up the transplanting until a rainy day, as can generally be done in the spring. The rainy days are of most uncertain arrival in mid-summer and the transplanting must needs usually, be done on dry days of high temperature, too, resulting in a high percentage of plant loss. This has led many of the home gardeners to make many and various experiments in transplanting ways during this period. One of these "home-acre" gardeners, whose operations have been under my observation for several seasons, finally seems to have discovered a successful method of overcoming this high per cent of plant loss in mid-summer transplanting—a scheme that is very simple in practice and thoroughly practical on a home-acre-garden scale. His method is not new in any fundamentals, only in the method of their application. It may properly be termed a "moisture reservoir" method of transplanting, if one must have a name for it. I have observed its use by this man for three seasons and given it some particular attention during the last two, both of which were very dry in this section during July and August. Last season it scored about ninety per cent effective. It is this:

As transplanting is to be done a hoe-width deep trench is opened where the plants are to be set out. In this trench is distributed a good inch and a half of semi-leaf-mold and partly decayed short grass, this having been thoroughly soaked by wetting down in a pail of water for a couple of hours. After this wet leaf-mold is put in the trench, the ground is leveled, two stakes at the ends alone indicating where the trench was.

Next, and *immediately*, the plants are set out along the line of this filled trench, using a dibble to make the hole, and otherwise proceeding just the same as in spring transplanting. By this method I have seen transplanting done in the morning even, of hot days during this period and noted that nearly all the plants came through in fine shape. Of course, the ordinary precautions against maimed or dried-out plantlets from the seed bed are taken, but no after-setting shading was done. The saturated leaf-mold in the trenches puts the moisture where the plants want it—at their roots—while the soil about them is not made into a cake or crust as when water is poured into a trench or a hole. The leaf-mold holds the moisture for about a week, sponge like, while by capillary attraction the soil all about the plant becomes moist, yet remains loose and a "hold" is easily obtained by the plant roots.

The mold this gardener uses he "manufactures" himself, it consisting of the lawn rakings and clippings of the previous fall and spring that have been gathered into a pile and rotted-down for this purpose, by frequent wettings.

All together the method has worked so successfully so far and I believe is worthy of more general trial in the home-acre garden.

New York State. LEW BROWN.

Shrubs in Full Leaf

WHERE one can move soil enough with the roots, even Lilacs may be transplanted almost any time of the year. Even when the soil is shaken off the roots in hauling, danger of losing the bushes is not very great. This spring after the bushes were in leaf and the flower buds far enough along to be noticeable, even from a distance, I moved about twenty-five mature Lilac bushes. They were dug

one day, allowed to remain in their old holes over night, and planted the next. A few had to wait until the day after. The new hole (or rather trench) was of course prepared beforehand. The bushes were not cut back until after they had flowered and, moreover, the transplanting did not interfere to any great extent with the bloom which was as abundant and the individual flower spikes almost, if not quite, as well developed as they would have been in their old location. After blooming, the bushes were cut back about one third and a good crop of new leaves resulted.

So also have I moved half-grown shrubs three to five feet high after blooming while they were in full leaf, always moving as much soil with the roots as possible. After moving, the leaves hang limp and seem badly wilted but the application of water brings them back to their normal selves again. Even where the leaves have drooped for an entire week a good wetting restores them.

Rootsprouts that were dug up out of the lawn in June and cut back two thirds have, in the past two years, developed in the nursery into thrifty two to three foot plants. Out of more than a hundred thus dug up, I did not lose five and this without artificial watering and but indifferent cultivation.

During the latter half of July I transplanted two Matrimony Vines, shaking the soil completely from their roots. In a few days the leaves were completely dried up and it appeared as if the vines were dead. About three weeks later, in August, the upper ends of the vines were foliated again and even some of the flowers were opening. The canes were four to five feet long when moved. This year, three summers after this moving, the vines are in every way as strong and well foliated as any that were transplanted at a more seasonable time and better watered.

North Dakota.

C. L. MELLER.

THE PATRIOTIC GARDEN

FOOD F-O-B THE

He also Fights who

EAT • FRUIT • AND • SAVE • SUGAR

KITCHEN DOOR

helps a Fighter Fight
H-HOOVER

EAT • NUTS • AND • SAVE • FAT

"Carrying On" In Your Own War Garden A. KRUHM

TO BE or not to be," a faithful, patriotic gardener—that is the question of this month. Baseball and picnics, 100 degrees in the shade and plenty of mosquitoes after sunset, are a few of the many distractions apt to put a damper on garden enthusiasm. BUT—

THE gardener who faithfully "carries on" now in spite of temptations and troubles will see his efforts crowned with triumph when, in his neighbor's garden, bugs, drouth, and weeds proclaim their complete victory. For, while every factor in nature combines to make July the month of bountiful crops, animal enemies also work overtime to get their share of loot out of the horn of plenty.

VIGILANCE is the keynote to the month's work. You have to protect what you've got, plant for the late harvest, and fight for what you expect. Besides bearing banner crops, fertile soils attract a ravaging army of bugs, etc. Either fight them or make up your mind that they are going to get the best of your garden.

ONE fine morning you'll go out into the garden to discover that every third or fourth plant in the late cabbage patch looks sickly, the bottom leaves wilting, yellow, and the whole plant looks done for. When you pull it up you find that the plant is deprived of all the little fibrous roots, the stem is hollow, and within, several specimens of some maggot are having a regular picnic. Destroy plant and all, and sterilize the soil with any of the many preparations available for that purpose.

NEXT day, you look over your fine onion patch and discover some of the plants covered with a fine, powder-like growth, called mildew. If the plants have not started to wilt, thank good fortune, rush for the knapsack sprayer and give the patch a bath of bordeaux, of course if you mix an arsenate with the bordeaux the one spray will also kill chewing bugs, etc.

NOR should you stop at spraying the onions! Go through the beets to prevent leaf spot; through the beans to fight their "spotted fever" called "anthracnose"; through the celery to ward off leaf spot and blight; through the cucumbers, potatoes, tomatoes, and melons to prevent either blight or mildew. Remember always—you can prevent these things, but never cure them.

BEANS of the dwarf or bush varieties are among the most profitable crops in the July garden. While, as a rule, level cultivation is best for all crops, it pays to slightly hill

the bean rows for two reasons: it holds the pods off the ground and keeps the wheelhoe or cultivator away from the plants. This latter point is particularly important because after blooming, and throughout the bearing period, the bean plants send out many lateral roots just beneath the surface of the soil. Cutting these roots with the cultivator shortens the bearing season of the plants.

CABBAGE of the Jersey Wakefield type or Copenhagen Market variety, will yield its first heads the early part of this month from plants started early in April. It is one of the shortcomings of these extra early kinds that they will burst quickly unless their growth is "checked." Do this by bending



Make use of space between late-growing crops by planting short-time ones, as for example—lettuce among the tomatoes

over the heads to one side or another. This breaks some of the side roots and arrests development.

JUST about the time the extra early lettuces are past their prime, endive is at its best in combination with late lettuce of the crisp head varieties. Don't fail to tie up endive in conical bunches as soon as plants average 12 inches across. It bleaches, and tempers the bitter flavor.

THIS is the crucial period in the life of every tomato plant. It must be trained to produce food, or it will develop enormous plants of herbage which not even animals will

eat. Early in the month set a 5 or 6 foot stake alongside of every plant. Reduce the plant to 3 of the strongest branches. Remove all side shoots, suckers, at the leaf joints, etc. Tie plants to stakes. Within two weeks, they will have reached the top of the stakes and will be full of blossoms and small fruits.

SINCE tomato plants are ordinarily set at least 2½ to 3 feet apart in the rows, the space between them may be utilized throughout the month. Lettuce lends itself particularly well to inter-cropping. Both All Seasons and Iceberg form fine, solid heads between the shade-producing tomato rows.

SURPRISING quantities of pickles may be grown on few hills, if the centre shoots of cucumber vines are pinched out when they have reached the boundaries of space allotted to them. A space size 10 in. x 10 ft. will accommodate nine hills, feeding three plants each. It is nothing unusual for a cucumber plant to produce a dozen four inch pickles. Multiply this by 27 and —!

SOME crops crave water more than others, celery for instance. It makes its most vigorous growth this month, but it must have water. Remember that it is better to give one copious watering once a week than to turn on the hose every evening for a "sprinkling." Don't hill celery while the foliage is wet. I have found it very convenient to use heavy paper wrappers for bleaching, rather than soil or cumbersome boards. The soil is apt to discolor the stalks, while the boards are difficult to secure and awkward to handle.

WHENEVER I see a man make a bonfire these days without having a piece of tin sheeting or some old tub under it, to catch the ashes, I feel like shouting at him "stop that waste." Wood ashes are a very high-class fertilizer and are about the best thing you can put on your onion rows, right next to the plants. In the home garden, under ordinary soil conditions, but with diligent cultivation, three applications of wood ashes between middle of July and end of August will increase the yield of onions fifty per cent. A pint cupful of ashes to every ten feet of row is about right.

Now is the time to see that every row does its duty, and makes way for the next crop as soon as possible. Consider beans for instance. Any of the sixty day varieties, like Bountiful, Stringless Green Pod or any of the various Golden Wax strains sown middle of April will have yielded the bulk of their crop by middle of July. True, they will keep on bearing some pods right along, but not

enough to compensate the gardener for the time it takes, or the chance it loses him to start another crop going.

REMEMBER that this is *the* month to prepare for your crops of roots for winter use, stored either in cans or in soil in the cellar. (On this particular point, read again the pertinent remarks in the June GARDEN MAGAZINE). Every row that is done bearing the first crop, even though not quite finished, should yield the space to such vegetables as beets, carrots, kohlrabi, turnips, rutabagas and winter radishes. It is well to remember that the last four are members of the same family and should not be sown where brassicas have grown just before. (This includes Brussels sprouts, cabbage, cauliflower, kale, and mustard). Most of these are heir to all the diseases that are apt to befall any of the others. The root crops are all subject to attack by maggots, and of course, a chewed or otherwise injured root is not fit for storage.

ANY OF the available varieties of these root crops will grow to large size from seeds sown



Pinch out superfluous lateral growth on the tomato. The young shoots shown here are in the right stage for pinching

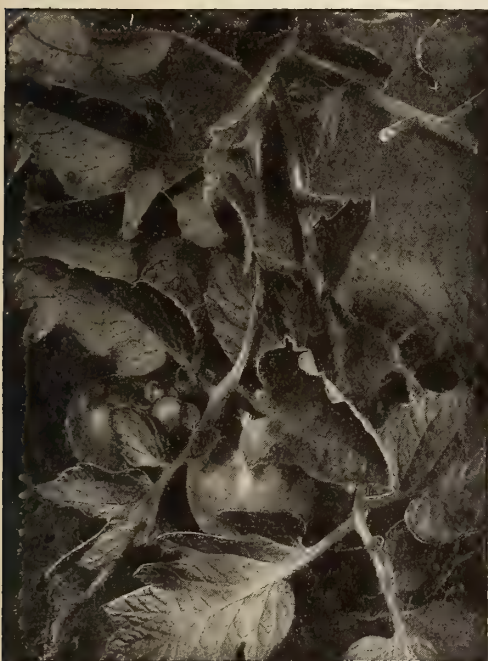
up to July 15th, because all stand considerable frost and do not stop growing until hard freezes in October. With other, more tender crops, like beans, corn, etc., first ask yourself the question "how many days before we'll have a killing frost?" and then decide on an early maturing type that will do the trick. There are between eighty and ninety days of good growing weather between July 15th and hard frosts in most sections of the country.

BEAR in mind that the same varieties of the short season crops, like lettuce, early radishes, peas, spinach, etc., may again be pressed into service to enliven the menu during the fall. Fall weather conditions—warm days, cool nights and ample moisture—are almost similar to those reigning in early spring. Early Malakoff, Peep-o'-Day, and Golden Bantam corn will all bear crops by October first from seeds sown up to July 10th.

WHEN in doubt what to plant in any given space or row in the garden, *plant crop insurance for next year*. By that I mean to

sow that spot to a green cover crop like vetch or rye, or both together. They'll keep down the weeds, enrich the soil, and, when turned under in the spring, will add humus—plant food of which no soil can have too much. Besides, forage crops like these furnish a dandy ration for chickens—where the season is open, they grow and stay green throughout the winter.

WHICH finally brings me to the point that, in connection with every act in the garden, the importance of keeping some sort of record is not appreciated as it should be. Do not trust to memory in gardening matters. Things happen so fast, and changes take place so rapidly, that it keeps even "seasoned" gardeners guessing. "Put it down in black and white" is a good motto to keep in mind. Note the dates when seedlings appear, when plants flower and when crops materialize. Then, of course, there are camera possibilities to prove your written statements, and THE GARDEN MAGAZINE will be glad to hear of splendid achievements or unusual results. Send them to the editor.



Tomato makes too much foliage. If left alone the fruit becomes densely shaded



Here is the same cluster as shown to the left after superfluous foliage is removed. This hastens maturity

Selective Draft in the Fruit Garden M. G. KAINS

Summer Pruning and Thinning the Set

JUST as in the army whole companies have volunteered when only a few men have been required so also is it in our fruit orchard. As explained last month Nature discards the physically unfit and plans to mature only the reduced number of fruits left hanging on the trees after the "June drop." But many of these fruits will never make specimens of best service to us humans and often they are far too numerous, so that upon both counts the campaign, while successful from Nature's standpoint, would scarcely measure up to the standard of perfection we would like to attain. To reach this standard we may apply the selective draft exemplified in the process of "thinning."

No one thing that can be done during the growing season will produce so marked a change in the appearance, the size, the quality, and pleasure of growing and eating good fruit as simply removing from 40 to 60 per cent. of the specimens before they have reached a third of their normal size. And no one thing if persisted in year after year will tend so strongly to prevent an "off year" and insure a crop every season. In support of this assertion I may say that a friend who owns a commercial orchard has missed only two crops from his Baldwin apple trees in twenty years. The failures were due to frost while the trees were in blossom, the successes mainly to the regular annual thinning, though good

care also deserves credit. If a commercial orchardist can do this with the Baldwin, notorious for "off years" and finds it profitable to do the thinning, may not an amateur do so as well?

Why Trim at All?

THE outstanding reason why thinning makes for annual yield is that the plant food that would normally go to the formation of a great number of seeds is saved because only a small number is allowed to develop. This saved food is partly stored and partly utilized to form blossom buds, fruit spurs, and other parts so that the tree is kept at 100 per cent. efficiency as a producer. To

develop the pulp the tree is at little or no trouble, for this material consists almost wholly of water and carbonaceous materials, the former of which come from the soil, the latter from the air. Hence the size, tenderness, juiciness and flavor are enhanced because the same quantity of water and carbonaceous material is apportioned more liberally to the reduced number of specimens. Actually the weight of fruit from a thinned tree is said to be about the same as from one not thinned; the fewer, larger specimens, however, are of far superior quality.

But thinning has other advantages. It prevents breaking of overloaded branches; for though it is not advisable to thin so severely that props may be dispensed with, yet fewer will be needed. Thinning also prevents getting rid of fruit infested with insects and diseases—those gnarley, wormy specimens that will never be anything but culls often so inferior that not even school boys will touch them! Removal and destruction of these fruits both relieves the trees of the drain of seed formation and checks the development of pests.

How to Proceed

AS TO the operation itself, growers differ in their preference of methods. Many men use small shears or scissors while others prefer to use their hands alone. In the use of the shears no special comment is necessary; the fruit to be removed is merely cut and allowed to drop. In hand thinning the fruit is either given a twist or the finger is placed against the fruit and pushed until the stem breaks or pulls out. In thinning as well as in harvesting care must be taken not to injure the spurs or little twigs upon which the fruit has been developed, for such spurs once destroyed are gone forever.

In order to avoid bewilderment it is well to start at a certain point on each tree and go over the tree systematically; otherwise there will be no telling when one is through. It is a good plan to start at the base of each branch and work outward toward the tip, removing first the defectives and then reducing the balance until no two specimens will touch each other even when full grown.

While this is in progress it is never wise to look at the ground for one is likely to lose his "nerve" when he sees "such quantities" as are sure to be there after really good work has been done.

As a sort of rule: Thin apples and pears so only one is left where clusters have set and have the specimens 8 or 10 inches apart when the whole thing is done. Peaches and plums may be handled similarly though the distance should be only four or five inches between specimens. It is scarcely practicable to thin cherries.

When to Start

THE proper time to begin thinning is shortly after the June drop has stopped. To determine this time the novice may hit the main limbs a blow with a heavy mallet padded with burlap or carpet. If a great many fruits fall the June drop is not complete; but if few or none fall the time has arrived to start thinning. Generally commercial fruit growers make two, sometimes three thinnings; the first in early July, the second three to six weeks after the first and the third (if done) when the fruit is full size but not fully ripe. This is done only where the fruit may be utilized for making sauce or vinegar. No use is usually made of the first and second thinnings. Where possible the fruit thus removed should be burned or deeply buried unless chickens and sheep or swine may be confined beneath the trees long enough to eat up everything clean.

The Case of Small Fruits

SO FAR as the thinning of small fruits is concerned little if any is done in the kind of ways so far discussed. To be sure some thinning of strawberries for exhibition purposes is practised but this is of such limited application as to warrant its being set aside. Similar effects with strawberries may be approached by other means; namely, liberal feeding from now forward until the close of the season and by preventing the growth of too many runners as well as of weeds in the bed.

Little thinning of raspberries, blackberries and dewberries is practised. When it is

done at all part of the clusters of fruit are clipped off preferably while they are small. But this plan is of less application and is certainly more laborious than that of pruning in such a way that thinning of the fruit is rendered unnecessary.

The clusters of fruit on currants and gooseberries may be reduced in the same kind of way as tree fruits but it is usual to let them grow until they are large enough for stewing or pie making. Of course pruning may be called to aid size, not however in quite the same kind of way as with the bramble fruits because of the difference in method of growth.

Summer Pruning

THE necessary summer pruning of brambles consists in the removal of all stems that have done bearing fruit. This means cutting out before the autumn arrives every stem that has borne. None of these stems will bear again ever, so the sooner they are out the better for they only serve as breeding grounds for insects, and infestation areas for diseases. Cut them all out at the surface of the ground and remove them with the least possible damage to the young stems of the season's development for these are what will bear next season's fruit, though some of them may bear a few fruits this fall.

Summer pruning of currants and gooseberries consists in cutting out and burning all canes that have borne three crops. They are usually the largest, darkest colored stems in the clump, and are often found to be hollow because of the attacks of borers. Immediately after harvest is the proper time.

Summer pruning of tree fruits is little practised in this country. Its chief merit lies in its influence on the development of fruit buds for the following season's crop. In general, it consists in shortening the young growths of the present season, preferably before the middle of July. For trees that are of bearing age but have not begun to bear it may be the means of inducing fruitfulness. Many amateurs, yes, and "professionals" too, make the mistake of too frequent or too liberal pruning with the result that they keep their trees on the production of twigs instead of fruit.

Returns from the War Garden Campaign

A Kaleidoscopic Summary of Some of the Tangible Results of the National War Garden Commission

"I AM pleased to say that almost every vacant lot in our city is planted," is the report from W. A. Vandergrift, mayor of Pomona, California. An exhibition and prizes offered are incentives to good gardens. Posters have been put up in the gardens bearing among other slogans this: "We are not planting this garden to make money but to help win the war."

* * *

RICHMOND, CAL., is thinking of the boys in France in its war garden work. J. F. Huliniski, who has organized, and is president of, the war garden board there, hopes to have a ship load of garden products, to which not only the citizens of Richmond will contribute but ranchers and others in the county, and send this to Europe for the soldiers.

* * *

THE REPORT from Santa Fé, New Mexico, is that practically every householder there

has a war garden. They will not have to go out of their own back yards for much of their food. A larger acreage has been planted in the state than ever before in its history.

* * *

HUGH WERTZ, seven years old, of the National Capital, goes to school, delivers newspapers and has a war garden. And this young "soldier of the soil" was not content with an ordinary vegetable plot; but he secured twenty-two varieties of seeds and is raising a crop de luxe.

* * *

CHINA HAS joined hands with the United States in the food production and conservation campaign; and the National War Garden Commission of Washington has sent garden and canning books to help in the work. Arthur W. March, of the Hang-chow Christian College, has written: "We are much interested and want to make more economical

use of what fruits and vegetables we have. Our fruits are in market for only a short time but at that time are very cheap." They were sent a supply of canning and drying manuals by the Commission.

* * *

ADDITIONAL to government activities in encouraging home food production in Canada, many manufacturing plants are helping their employees. The Hanover Portland Cement Co., Hanover, Ontario, secured a tract of unused land from the Canadian Pacific Railroad for this purpose and gave its men garden instruction booklets from the National War Garden Commission.

* * *

AT A "LOYALTY DINNER" given by the Scientific Societies of North Dakota at Fargo, food raising and saving were the principal topics, the banquet hall was adorned with posters furnished by the National War Gar-

den Commission of Washington and the "eats" were distinctly Hooverian. J. W. Ince had charge of the details.

SHE WAS born on American Independence Day. That is the reason why Jeanette S. Hamburger, of Baltimore, believes she should have a war garden in addition to the other patriotic things she has done, such as buying a Liberty bond of each issue and war savings and thrift stamps. More than 5,000,000 war gardens in the United States this year are working for Freedom.

EDWARD E. YEATON, secretary of the Lynn (Mass.) War Garden Committee advocates limiting the size of children's gardens to ten feet by ten. If allowed to have bigger plots, says Mr. Yeaton, the youngsters become discouraged and fail to get the best results. Better a little well done, he says, than failure on a larger bit of land.

JOHN J. FARMER reports that the Remington Arms Company at its Bridgeport, Conn., plant is making ammunition of two kinds. It has supplied the workmen as far as possible with garden plots on forty acres of land owned by the concern; and that employees living at a distance from the company's property have been provided with such plots in the vicinity of their homes through the local war garden commission.

PINE BLUFF, ARK., has increased its war garden enrollment 1,500 per cent. over that of last year; more than 700 persons have gardens as against 47 entries last year. R. Louthan, chairman of the Rotary Club War Garden contest, is offer-

ing two hundred and fifteen dollars in garden prizes.

HIGH SCHOOL grounds at Nogales, Arizona, have been planted in wheat and every avail-

and trays filled with model fruit are being shown.

"WELLINGTON is right up in the baldheaded row in war garden work, as she has been in every other war activity," writes A. W. Lynn secretary of the Wellington (Kans.) Commercial Club to the National War Garden Commission at Washington. He adds that every available bit of ground has been planted and five war garden clubs have been formed.

TRACTORS, working night and day, furnished by the Preparedness Board, have plowed under vacant lots in Lansing, Mich. Beans and potatoes were planted.

THREE THOUSAND war gardens have been planted as the result of a well-organized garden campaign at Bellingham, Washington. The Chamber of Commerce hired a supervisor and secured the coöperation of the Rotary Club, Advertising Club, Real Estate Association, Board of Education, Woman's National League for Service and the National War Garden Commission.

NEEDING MONEY to rent lots for war gardens, residents of Medina, Ohio, gave a community entertainment and raised a fund which not only paid for the lots but also for the plowing.

HAWAII this season has deserted the ukelele for the hoe, and war gardens are the rage. Artistic posters, contributed by the National War Garden Commission adorn shop windows and J. F. Child, the food administrator is leading a "drive" for canning and gardening.



MODEL WAR GARDEN AT CAMP DIX.—Camp Dix with its 48,000 soldiers has the biggest army garden in the country thanks to the National War Garden Commission of Washington which sent the boys nine truck loads of seeds and implements. Capt. Bethke of the Quartermaster Corps was all ready with a baby war garden for a model for the soldier-farmers

able plot of ground that can be irrigated by pumping is now in crop. Ground that has been idle for years is being utilized and no plot, suitable for planting within a radius of five miles is unused. Fruit drying is on



SOLDIERS PLANT "REAL" WAR GARDEN.—The soldiers of the American Army are going to help feed themselves. They started the first "war garden" at any of the training camps in the United States at Camp Dix, N. J., and for this purpose nine big motor trucks loaded with seeds, fertilizer, cultivators, and other tools were donated by the National War Garden Commission of Washington, Charles Lathrop Pack, president. Lieut.-Col. Edmond Tompkins, Quartermaster at Camp Dix in centre of picture. Capt. E. V. Champlin is in charge of the 400 acre war garden

MOST interesting of the by-products of

Uncle Sam's gardening is the splendid co-operation it has developed; and never is such coöperation more successful than when the people of a community organize to meet their community needs themselves.

Any community which last year was handicapped by a shortage of labor for harvesting should take notice, for instance, of Palo Pinto County in Texas. Texas, by the way, is managing its war-gardening admirably, and the photograph here shown of the Governor's wife, Mrs. William Pettus Hobby, as the Woman With the Hoe, her garden in the foreground, and the Capitol modestly standing in the background, is typical of the place gardening occupies in the minds of the good people of the state. Early this year, in Palo Pinto County, a mass meeting was called by the County Agent (representative of the U. S. Dept. of Agriculture and of the State Agricultural College). At this meeting a County Agricultural Advisory Board was organized, its first object being to secure an increased planting of food crops; its second to secure at home the farm labor necessary to cultivate the crops.

To every man in the county qualified to do farm work, whatever his present occupation, in country or town, was sent this blank card. "I agree to work on the cultivation and harvesting of the crops of Palo Pinto County, Texas, during the year 1918, a total of — days, under the supervision of the Agricultural Advisory Board of said county, at the usual average wage paid for such labor. All wage difference to be settled under arbitration." The card contained space for the name, address, telephone number, and business of the individual signing it. A systematic canvass, a "follow-up plan," has been conducted in the towns and Palo Pinto County has now a "Labor Reserve" sufficient to meet the needs of this season's planting.

WILKES-BARRE, PA., is even more thoroughly organized for farm-efficiency than Palo Pinto County, owing to the excellent work of the Greater Wilkes-Barre Chamber of Commerce, the Rotary Club, other local clubs, and the Luzerne County Farm Bureau. First a joint meeting of all the clubs of the city and the County Farm Bureau was called by the Chamber of Commerce. About 300 farmers were present. The next week a similar meeting brought out 500 farmers—men from every part of the county. The business men proposed to canvass the city and all the towns in the county and secure from men of past farm experience pledges to work on the farms as crop necessities arise during this summer and autumn. The farmers agreed to use this labor. The 3,700 farmers in the county were divided into groups of five, each group being owners of neighboring farms. The chairman of each group ascertained and reported the exact labor needs of himself and his four associates. The 740 reports, classified and compiled at the Chamber of Commerce, show the number of workers each individual farmer, and each farming community will need at various times during the season. Meanwhile the business men were not idle. A survey was made of the city and towns and an emergency farm labor supply enrolled. The transportation committee worked out a time-table and impressed automobiles into service, and now the plan is operating beautifully. Out to

UNCLE SAM'S GARDENING

A News Feature of National Current Activities

the farms in automobiles loaned by their owners for the purpose, go the town volunteers, called upon as their service is needed.

* * *

SUNDAY SCHOOLS should observe Lockport, New York, whose Sunday Schools undertook to save crops as well as souls, and volunteered by classes for the peach orchards and saving the peaches. Haying, threshing, harvesting parties, picking bees, bid fair to be as fashionable this summer as were the husking bees of a hundred years ago.

* * *

UNCLE SAM is doing everything possible to give aid and comfort to the gardeners and farmers, his latest reinforcement being a War Emergency Board of Specialists in Plant Diseases. This Board is composed of seven men appointed by the National Society of American Plant Pathologists. The purpose of the Board, which is coöperating with the National Research Council, is to acquaint the public with useful facts about molds, blights, and the various agencies of microscopic size which cause foods to decay. Strawberries, for instance, are subject to a mold which, if allowed to develop causes the berries to soften, resulting in the familiar "melting" condition and stained appearance of the box. Temperature is a very important factor in this case and loss may in large measure be prevented by picking the berries early in the



Mrs. William Pettus Hobby, wife of the Governor of Texas, doing her share in the State's contribution in winning the war

morning and shipping them while still cool and damp with dew. In the case of onions, however, moisture is a serious detriment. If onions are packed before being properly dried, various forms of spoilage, including the damaging "neck rot" are likely to occur. A large amount of food, especially fruit, decays through injury from rough handling.

The War Emergency Board of American Plant Pathologists is composed of men who are not only specialists in plant diseases but who understand food economics and methods of getting the information to the people. They earnestly request the coöperation of the public.

* * *

ONE OF the most practical ways in which any community can aid in eliminating food waste due to loss in transit is to organize their own transportation system. If automobile owners can coöperate with the farmers and take volunteer farm-hands out to the scene of their labors, they can also coöperate and bring back by truck or tender the fruit of their toil. The more this sort of thing is done, the more the railroads will be released for war service, and the more the community is self-dependent in transportation as well as in production, the better off it is, and the more secure in any emergency.

* * *

THE UNITED STATES School Garden Army is already bigger than the army of the United States, so the Department of the Interior announces. One million, nine hundred and fifty thousand were enlisted this spring after a six weeks campaign. The Central Western states including Ohio in the East, with the Dakotas and Minnesota to Missouri have enlisted 850,000 boys and girls. The Southern states have enrolled 700,000, the Northwestern and Western states each 200,000. Oklahoma is the banner state with an enlistment of 150,000 and Texas has 100,000.

The Army is organized through the Bureau of Education and the Department of the Interior and Secretary Lane, under the President, is chief officer. There are officers, privates, and assistants, salutes and service flags. The badge of service is a bar pin with a star for the lowest officer, two stars for the next, etc. Enrollment entitles the young soldier to his or her badge. The idea is of very recent suggestion but already interesting things have happened:

Forty thousand women in the West, for instance, says the *Memphis Appeal*, have taken a pledge to use no sugar in their tea, nor butter on their bread until each one has a child in the Army, either her child or some one else's and she pledges herself to provide that child with land enough to raise serviceable gardens. This land is furnished either by individuals, by schools, by real estate firms, or by local organization such as chambers of commerce, boards of trade and the like. The Tomato Club of North Carolina, that last year raised \$5,000 of tomatoes joined in a body, as have the boy scouts, girl scouts, and kindred organizations.

San Francisco had a procession of 50,000 school children. Plan and organization are as follows:

President of the United States, Commander-in-chief.

Secretary Lane of the Interior, first officer in command, with

Secretary Claxton of the Bureau of Education as assistant commanding officer.

The badge—a bar pin with one star for a sergeant, two for lieutenant, etc.

A pledge of loyalty to be taken by each enlisting soldier.

A movement of the children, by the children and for the children.

There will be in the fall county fairs for children. The winners of these will hold a state fair at the capital of the state. The winners of state fairs will come to Washington for a national Children's Fair, and the President of the United States will award the prizes, of a scholarship in Annapolis or West Point, or at one of the big girls' colleges, or a fine farm.

FRANCES DUNCAN.

Indoor Decorations From the Garden

AUGUSTA D. EVANS,
Illinois

Remember to Prune Shrubs While
In Bloom and Have an Ever-Chang-
ing Succession of Beauties Appropriate
to the Season for Indoors



The dining-table is the place for short branches of shrubs. Flowering Dogwood with Japanesque effect

IT IS a great mistake to think that the only proper decorations for the home are expensive flowers bought at the florists shops. Greenhouse Roses and Carnations are lovely flowers indeed, but Roses and Carnations the year round are monotonous and especially when with a minimum of expense and care every one can have both garden and cut flowers from April to October.

Have a border of permanent shrubbery as a source of cut flowers instead of putting all your energies into flowers that must be raised anew every year. Make a selection of a kind that will give bloom and color every month of the growing season—and then don't let an ignorant laborer trim the bushes into "balls" or round heads every March. Let them grow naturally and when they come into bloom, cut off sprays to decorate porch, parlor and living room. This is the way to keep your bushes young and full of flowers. In other words, *prune your shrubs while they are in bloom*, not before.

Shrubs are particularly appropriate

where large masses of flowers are needed. Cut long, arching sprays of Bridal Wreath, Weigela, Viburnums, and fruit blossoms to bank against the mantle and hang down in graceful festoons. Heap them in the unused fireplace to hide its smoke-blackened walls. Use them in the umbrella stand to brighten a dark hall. Put them in tall vases on the tables where they spread gracefully. Long sprays quickly fill up empty spaces and give an effect which could not be secured from florists' material except by great outlay of money.

Use shrubs for the dining table by arranging short stems in baskets or bowls. Nothing is more effective for the dining table than Flowering Dogwood with its Japanesque effect, arranged in a brass bowl; or the delicate pink wild Crab with its gnarled branches arranged in a simple, inexpensive basket. Mock Orange, with its waxy blooms and fragrance, and Weigela, with its deep pink blossoms, are



An idea for porch decoration. Lilacs in a market basket containing two one-pint glass jars

particularly appropriate for table decoration.

A novel idea is the use of baskets of shrubs for porch decoration. This is the best use for masses of informal flowers like the Lilac, and for wayside flowers like Asters, Buttercups and Daisies, Goldenrod and Queen Anne's Lace. A market basket containing two one-pint Mason jars filled with water will keep the flowers fresh for days.

Top-heavy shrubs, like the Snowball, on account of their weak stems are not so generally used as they might be. But they arrange admirably in baskets where their stems are supported by a solid foundation and

where they droop gracefully over the sides. Elders, Viburnums and Peonies with weak stems arrange to the best advantage in baskets.

Every shrub border should also contain some Lilies or Irises for decorative purposes. One of the best uses for Iris is to bank it in a moss filled box on the mantle. Use a box from which one side and the ends have been taken away, fill it with wet spagnum moss and stretch wire across the top.

SHRUBS THAT WILL FURNISH DECORATIVE MATERIAL FROM APRIL TO OCTOBER
(Arranged in Order of Importance and Time of Blooming)

COMMON NAME	BOTANICAL NAME	COLOR	TIME OF BLOOM	HEIGHT (FEET)	APPROXIMATE COST 2-3 FT.
Bridal Wreath	Spiraea Van Houttei	White	April-May	3-4	\$.25
Golden Bell	Forsythia suspensa	Yellow	March	6-7	.20
Lilac	Syringa vulgaris	Lilac and White	April-May	6-12	.20
Snowball	Viburnum	White	May-June	10	.20
High Bush Cranberry	Viburnum Opulus	White	June	7	.20
Flowering Dogwood	Cornus florida	White; brilliant foliage and berries	April	15-20	.35
Mock Orange	Philadelphus coronarius	White	Sept.-Oct.		
Weigela	Weigela or Diervilla	Rosea pink; Candida white	May-June	5-7	.25
Japanese Rose	Rosa rugosa	White, pink red hips	May	6	.30
Rose of Sharon	Hibiscus syriacus	White, blue, rose, red, purple	July	6	.35
Buddleia	Buddleia variabilis	Delicate lilac	June-July	4-6	.25
Red-fruited Barberry	Berberis vulgaris	Yellow; brilliant foliage and berries	Aug.-Oct.	7-10	.20
Staghorn Sumach	Rhus typhina	Red berries; brilliant foliage	Aug.-Sept.	4-5	.35
			May	5-6	.20
			Sept.-Oct.	5-6	.25
			Autumn		
					\$3.20

13 varieties, one plant of a kind, for approximately \$3.20. For \$5, 2 plants of a kind can be purchased in most cases. For brilliant autumn and winter effects use Dogwood, Red-fruited Barberry, and Staghorn Sumach in the border



For the mantelpiece use arching sprays two or three feet long like this Spiraea Van Houttei, Weigela, or Golden Bell. All old shrubs produce long arching sprays



Top-heavy and "floppy" flowers like Snowball look best in baskets where they receive support. Elders, Viburnums, and weak-stemmed Peonies may thus be used

The Woman's Land Army of America

How the Women of America, Like Their Sisters in Great Britain and Canada, Are Helping to Solve the Farm Labor Problem—War Work That Serves the Nation and Benefits the Worker

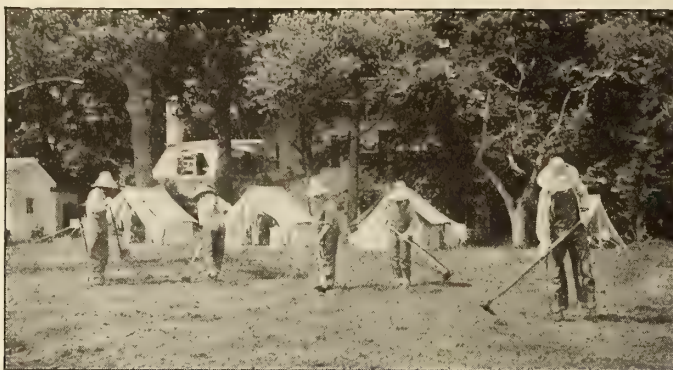
FOR many months this nation and its European allies as well, have been looking to the American farmer for the solution of the vital problem of food production. Mr. Hoover has accurately described the situation in telling us that we must feed not only ourselves over here, but also our soldiers overseas, their comrades in arms and the unhappy victims of the enemy's destructive malevolence in Belgium and northern France; that the crops of 1918 must be larger than ever before or we shall come face to face with famine.

Last year when the appeal for more food made the farmers respond with a splendidly patriotic effort, they planted more crops—but often at a financial loss, for at harvest time labor was at a premium and much valuable foodstuff was wasted because it could not be gathered and marketed.

This year, in view of that costly experience, and because there is promise of an even smaller supply of trained help, it is reported that the acreage in crops is eight per cent. less than last year's harvested area—which did not include the acres from which crops were not taken. Nevertheless crops we must have and they cannot be raised without hands to do the work. Everywhere the farmer is wondering whence he can replace the son who has enlisted or the hired man who has gone into the munitions factory. The condition is a serious one; a preliminary census in New York State alone puts the farm labor shortage at more than 20,000 men, and this is typical of the plight of other states.

TO MEET this problem there has come about the organization of the Woman's Land Army of America. The women of England and Canada have been working on the land with remarkable success since the early days of the war. England's Land Army now numbers 258,000 women and is regarded by the Government as a valuable asset. There is no reason why our women should not be equally valuable on our farms. They have proved their fitness for such work, not only in the agricultural colleges, but also in experimental camps or units sent last summer into farming sections of New York and New Jersey. These groups were entirely successful, and the farmers who employed them, though skeptical at first, now give universal testimony of the value of the service rendered. They agree that whatever the women lacked in training they made up in conscientious work and in speed.

It seemed well worth while, therefore, at the close of the summer, to carry on this work on a larger scale, and in December, 1917, repre-



An under-canvas unit that did much effective work last year at Bedford, N. Y.

sentatives of many women's organizations met in New York City and formed the Advisory Council of the Woman's Land Army of America, for the purpose of organizing units of women for farm work and promoting the use of women in agriculture generally, and their training for such work. Miss Delia West Marble is chairman of the Advisory Council.

THE Land Army has perfected, advocates, and follows what is known as the "unit system" under which women who register and are found physically fit for work are sent in groups including anywhere from ten to one hundred, to districts where farm labor is needed. Here they live in a vacant farmhouse or barn, a tent, camp or other inexpensive but comfortable healthy quarters with a matron or unit supervisor in charge. Here they sleep, eat their breakfasts and evening meals, have their lunches prepared and their laundry work done. Each day they go to neighboring farms (in automobiles if the distances require it) taking their lunches, and returning to camp at night.

The women put in an eight hour day at the wage rate prevalent in the section, usually \$2.00 a day. This is paid to the unit, or rather its supervisor, who makes the necessary arrangements with the farmers, distributes the workers, arranges for their transportation, etc. Then the unit pays each worker a moderate wage, perhaps \$15.00 a month, the balance covering the cost of her board, laundry, part of her equipment, transportation to and from farms, travelling expenses from her home and the maintenance of the camp. By this means units, it is found, can be made self supporting.

Last year the women did all kinds of farm

work, including plowing, dairying, caring for horses, haying and fruit picking. Without exception they returned home in splendid physical condition and with the three-fold satisfaction of (1) having served their country in a very real way, (2) having had a real country vacation with all its accompanying benefits, and (3) having made some money at the same time.

Among the most important advantages of this system, as compared with most emergency farm labor plans, are these:

First, the farmer's wife is relieved of the extra work of housing and feeding the additional labor. This in harvest time has often attained

terrifying dimensions in the past. Second, the farmer pays only for the actual work he receives and does not have to carry the help over during slack periods. Third, precautions are taken that the women do not undertake the work unless physically fit, as certified by a physician, and are not permitted to do more than they are really able to. While women will, of course, vary as to the type and amount of work they can do, it is usually possible to distribute them according to their abilities at first and to move them about as their powers increase under the influence of regular, outdoor exercise. But the

range of duties in connection with the life and work of a unit is so wide that it is hardly possible for a woman to waste much time finding her niche of usefulness.

ALREADY the Land Army is not only endorsed by agriculturists who have studied the movement and practical farmers who have had experience with it, but also recognized by the President as the following letter to Mrs. Rogers, the chairman of the Executive Committee testifies:

I am gratified to hear of the plan of the Woman's Land Army to help increase the food supply of our country and the Allies through enrolling active and patriotic young women in self-sustaining groups or units to aid in cultivating crops where the farmers have need of them. I trust that our farmers, like the farmers of great Britain and Canada, will avail themselves of this aid to the fullest extent practicable, and that the response of our loyal young women to this need, wherever it exists, will be generous and complete. Cordially and sincerely yours,
(Signed) WOODROW WILSON.

It is now working in coöperation with the Women's Committee of the Council of National Defence, the U. S. Employment Service of the Department of Labor, and the office of Farm Management of the Department of Agriculture. Recruits can obtain information and registration blanks from, and farmers can list their labor needs with the Army Headquarters at 32 Fifth Avenue, New York City. The practicability and efficiency of the plan are no longer in question—it works!



Khaki with leggings in use by Land Army. (Best & Co.)



Strong land boots in this outfit. (Abraham & Straus,



Overalls specially designed for women gardeners. (Halle Bros. Co.)



Smock effect with puttees and straw hat. (Franklin Simon & Co.)



"Molly Pitcher" costume with knitted hose and low shoes. (John Wanamaker)



An 8 x 15 Ft. Rock Garden ROBERT S. STURTEVANT

Making a Lot of a Little—Suggesting the Big Opportunity for the Plant Connoisseur and Collector—Ample Space for a Hundred or More Different Plants

A LITTLE slope of hillside between a decrepit Apple tree and a grandfather Pine is the site of what I call my miniature garden. It faces to the south and the gravelly soil has been well overlaid with woods-earth, a layer that has been molded to give a varying depth of good soil to suit the different plants. Within this limited area there is room for a great variety of wee plants that carry some interest of flower or foliage throughout the year. Even when this was written toward the end of a wintery March, the green shoots of Crocus, (the fading lavender Tommasinianus) and a lone Iris reticulata show through the spidery webs of a Sempervivum, while a few purple-shaded leaves of the dwarf blue Columbine are ready to uncurl among the startling gray of my favorite Artemisia that hangs down across the face of a rock. (Just which Artemisia this is, I can only guess; it is low, not over 6 in., and shrubby, with neither the size of the familiar Southernwood, nor the rampant running Boy's Love. A. frigida seems correct but every purchase under that name has been a disappointment).

BEFORE I venture to dilate upon the occupants of my garden I must sketch its topography, if so large a word may be applied to so Lilliputian an area. A sharp bank fully 2 ft. high drops abruptly to the path; above is a long valley fully a foot wide, in spring a drift of Anemone apennina, sky blue, to be followed by the self-sown seedlings of the Lavender Cress (Ionopsidium); into this runs a short ravine with a boulder-strewn slope on one side and with a steep cliff where various members of the Sempervivum family spread out their charms on the other. So here I have two hills, a long valley with parallel crests, a ravine and the bank where the natural grass is gradually giving way to a thick carpet of the lavender Phlox subulata and the double Arabis. Here also in a carefully prepared pocket of red clay, the native Bird's-foot Violet (Viola pedata) has been established and a few plants of the delicate Harebell (Campanula rotundifolia) give scattered blooms well past the heavy frosts in the fall.

ONE hill is capped by the shrubby Potentilla Veitchii, its gray-green lit by small, rose-like white flowers; the other has a bush of the yellow Japanese Barberry, a slow grower in this thin soil, and not too permanent a yellow to be obstreperous. Both these are in scale with their small leaves and some lately introduced plants of Heath and Heathers, that seem to have survived our unusually cold winter. There are seedling Aubretias, some as rich in color as the intense Dr. Mules, others a pale lavender that is charming with the rather inconspicuous blush of the late blooming pink Spanish Scilla (S. bifolia), a group of white Allium, a tuft of the vivid fringed Peony (P. tenuifolia), a mere sample of the Cup-flower (Nierembergia), and a healthy patch of a diminutive Thyme (Thymus lanuginosus) that in spring the sun touches up its winter gray with bronze and

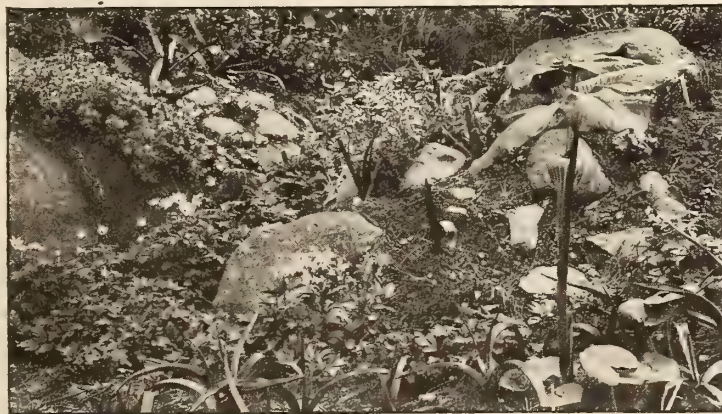
purple. The close cropped Veronica repens, so flat that the flowers seem like fallen petals, has a place and near by are tufts of Bluets.

The crest near the bank has a long drift of the starry yellow Tulipa persica, the latest



This is the Ravine in the miniature garden described. It gives a delightful setting to a rich variety of charming plants

to bloom, and much enjoyed with the delicate hues of the Waterlily Tulip (T. Kaufmanniana) after the rather disappointing bloom of biflora and Turkestanica which have had to contend with the constant and heavy rains of the spring. I must acknowledge that many of these are out of scale, but how can I leave



The Jack-in-the-pulpit on the right was introduced to give "scale" to the composition as a whole. Rock gardening is the ideal refuge of the collector of odds and ends

them out when they are so lovely in themselves? In fact I have introduced, just for contrast, a giant Jack-in-the-pulpit, and it helps to put everything in its proper place.

THE Iris family is represented by reticulata and its redder variety Krelagei, which blooms first; one year I bloomed the lighter persica; by the true pumilas; and later,

two gems for the rock garden, our native cristata and gracilipes which last is found wild in the woods of northern Japan; verna adds its rich orange and blue, but is not quite so lovely as the others. I have long tried to establish flavissima as its dainty clear yellow blossoms must make a charming clump and I wonder whether any who read this have grown it with real success. I plant groups of the oddities such as Susiana, alata, Korolkowi, that in its sleekness reminds one of a guinea hen, and the reglio-cyclus hybrids which are lovely in their rich and subdued coloring. They are not very permanent but some time I may chance on a variety that likes my conditions.

YOU will wonder how so many plants can find a foot-hold; but I am a strong believer in two-story planting which can give at least two periods of bloom in each 6 inch square; in many cases I indulge in samples only, especially where they are not sure "thrivers." It is easy in such a small place to be watchful, to remove plants that prove too large or rampant, to slip in a bulb for trial even if it is not hardy after all. We may regret the loss, but find unexpectedly something even better, perhaps; and I hope some GARDEN MAGAZINE readers who are also rock gardeners will relate their experiences of both success and failure.

FOR us the recently listed Thalictrum adiantifolium minor is proving just the thing, and for a shrub the finely divided gray foliage of Ruta graveolens seems adaptable; I cannot say much for the Tansy-like yellow bloom, but the long period of excellence of the compact pleasing growth makes it worthy a place. It is called an under-shrub but in my mind I class it with the blue and white forms of Hyssop which (if the odor is not too objectionable) seem fitted for a formal edging. The finely formed fronds of Asplenium trichomanes combine with almost everything; to be really happy it should have moisture and with that present you can have the shade-loving Partridge-berry, the Gold-thread with its glistening leaves and white flowers, and many others of our woodland flora.

AMONG the bulbs and "near bulbs" the possibilities seem endless. Beside the few Tulips I have mentioned I have the European and Neapolitan Cyclamens with their marbled leaves and dainty flowers, one blooming in summer and the other in the fall; Hoop-petticoat Daffodils and Angel's-tears (N. triandrus); the autumn Colchicum has, what is a great drawback to me, coarse foliage; but the true Fall Crocuses with their grassy leaves (speciosus, sativus, and zonatus) all have a place; Dog's-tooth Violets (Erythronium) cast a spell, and I am always looking for a place where they will bloom well. They seem to be easy enough to grow but very shy in blooming. The native one is good but I prefer the soft lilac European one (E. dens-canis), and the beautiful Californian (E. giganteum); the varieties of Dutchman's-breeches

(Corydalis) have much the same charm, bulbosa pleases by its delicate leaves and healthy growth, nobilis is a little too heavy and strong for so small a place; but the native Dicentras (so closely related) are just right, with finely cut glaucous foliage and rose, white or yellow flowers.

THIS is but a beginning. The glory of the rock garden is over in June, much of it is at its best before the vegetable planting season opens, the area is small, the labor in proportion, and the pleasure without end.

Growing Rose Slips

IN MAY and June I gathered slips of the Roses I wanted to grow, taking for this purpose the young shoots that were not going to bloom. The books and papers say to wait until August, but I never have done so and have had splendid success, rarely losing a plant or having one that does not take root. The slip, when trimmed ready to plant, has four or five buds and is planted with two buds above the ground, in the garden in ordinary soil, watering well, and covering immediately with a Mason fruit jar. The slips were well watered every evening and shaded with a board from eight until six on sunny days.

They began to grow in from three to five weeks, and as soon as the little leaves began to show, I gave them air by inserting a little stick under the edge of each jar. This opening was made larger as the plants grew until, when they were well leaved out, I removed the jars altogether. But they were shaded with boards on all the hot dry days of summer, and watered thoroughly at night. By fall they were thrifty little Roses. After frost, I gradually gathered leaves around them until they were even with the tops of the plants, and thus they were wintered safely under the snow. In the spring they were set out in their permanent places.

My experience proves that any one can raise Roses this way if they have the patience to wait a year, and are not in a hurry for immediate results. And the garden lover can appreciate the fascination of this kind of work.

Iowa.

E. L. W.

Flowering Cosmos Under Glass

SOME interesting experiments in the flowering of Cosmos under glass have been made by H. W. Vose, of Hyde Park, Mass. Mr. Vose has been able to produce flowers quite as large as those grown outside, and he thinks that his success has been due to the fact that the seeds were planted late. He has found that the flowers will come as quickly as on plants of the same variety started much earlier, but that the plants will not attain so great a height. Of course, it is a distinct advantage to have the plants dwarf when they are to be grown under glass.

Even when Lady Lenox is planted early in the spring in the Northern states, the plants are often killed by frost in the fall before they have blossomed. Mr. Vose, however, waits until the first of August. Then he sows seeds of Lady Lenox in the open ground, moving the plants to the greenhouse before hard frosts come. The plants are then from a foot to two feet high. Last fall many of the plants were budded when taken inside,

late in October. Apparently the plants received but little check, for all the buds opened, and the flowers began to come in great profusion. They kept on blooming until after Christmas.

Cosmos handled in this way does not need any coddling. The plants will do well in a house where the temperature drops as low as 40 degrees at night. Some gardeners in times past have tried taking in Cosmos plants started in May. Usually these plants have soon drooped and even though they recovered, have lost their lower leaves. Mr. Vose finds that plants started as late as August 1st are much more compact, keep their leaves better, and have a more thrifty appearance.

There seems to be no reason why every amateur who has a private greenhouse should not be able to prolong the Cosmos season until late in the year. There is just one point to be remembered. The plants must not be showered. Wetting the foliage injures it, although water may be applied at the roots in abundance.

Massachusetts.

E. I. FARRINGTON.

Keeping Up Fertility for Next Year

INTENSIVE gardening proves a heavy drain on soil fertility. By the time the average row has yielded two or three crops, it needs replenishing with nearly all the elements necessary to sustain plant life.

The present lack of proper fertilizers will make itself felt more and more, as the season progresses. It will prove still more embarrassing next spring, unless we take steps to enrich the soil as we go along.

The one sure way to improve your garden soil is to keep it busy. With the help of the proper kind of plants, your garden may be turned into a plant food producing laboratory as fast as space becomes available to sow new seeds.

Agriculturists have long recognized the importance of legumes as soil enrichers. These same legumes will prove the salvation of American home gardens another year. Briefly, legumes are plants of the bean, pea, and clover family. They absorb nitrogen from the air and store it in the soil through nodules that grow on their roots. The rank-growing tops or plants proper, dug into the soil, supply humus. Add some lime to hasten decay of tops and roots, besides counteracting acidity, and the garden will be in better shape after a year's work, with legumes for a finish, than it ever was before.

Legumes for present planting are cowpeas, soybeans, and velvet beans, all of which revel in warm soil and thrive luxuriantly throughout the summer. The clovers, of which crimson clover and bokhara are the two most practical because of their rapid growth, may be sown throughout summer and fall. Hairy vetch, of the bean family, is hardy and stays at work all winter.

No special soil preparations are necessary to succeed with any of these crops. Clear the ground of previous crops, break the surface to a depth of two or three inches with a wheelhoe, broadcast seeds or sow in drills, rake them in and roll lightly to insure prompt germination.

Two to three pounds of seeds of cowpeas, soybeans, or vetch will prove ample to seed an area of 40 x 50 ft., while one pound of the clovers suffices for the same area. All will make a strong growth between July and October.

"Oats, Peas, Beans, and Barley Grows."

THE remembered childhood rhyme goes on to state, "You nor I nor nobody knows." Ignorance of "wheat substitutes" caused no ripple of dismay then. But to-day the determination to send to the Allies the wheat they must have has sent us to our gardens, our cook books, and our geographies for information on wheat substitutes. We want to know what to eat in place of wheat, how to grow it, and if we cannot grow it, where to get it, and how to use it.

The substitutes which probably will be most used in place of wheat are Irish potatoes, buckwheat, rice, barley, oats, and corn. Others not so well known are the soy bean, feterita, and sweet potato flours.

The soy or soja bean is found in the South Atlantic states, especially in the two Carolinas. Soy bean flour, which has a slight starch content, may well be used in biscuits, muffins, and bread, very much as is corn meal.

Feterita flour is found in Oklahoma, New Mexico, Arizona, and the Panhandle part of Texas. It is very similar to milo flour. Good batter cakes can be made with feterita, and in the regions where it is grown it has proved itself useable just as is cornmeal. Feterita has the good characteristic of being a drought resistant crop.

Alabama, Georgia, Mississippi, Virginia, and the Carolinas lead in the production of the sweet potato, while the Irish potato is grown especially in the North, the chief producing states being Michigan, New York, Wisconsin, and Minnesota.

New York and Pennsylvania grow more than two-thirds of the buckwheat raised in the United States. West Virginia and Michigan are the other two buckwheat states. This flour is being increasingly used for human food especially in cities.

Barley flour is fairly new to us. We have known the little polished grains in barley soup, but we have not realized that, mixed with wheat, barley flour makes a very palatable and nourishing bread. Barley is an oily flour and will not keep as long as some of the others. The barley states are California, Minnesota, and the Dakotas.

Rice, although especially a food of the Orient, has also its many votaries in the Occident. Alabama, Louisiana, Texas, and Arkansas are the chief rice growing states, and California is rapidly joining the group. Broken rice, or brewers' rice, can be ground in any ordinary roller mill. It makes an excellent flour for bread and cakes.

Oats, which we connect mostly with breakfast porridge, we have not begun to exploit. Oats can be mixed with wheat to make a very good bread, and, without wheat, delicious cookies and puddings. The great oat states are Iowa, Illinois, Minnesota, and Nebraska. Our oat crop for 1917 was 1,537,286,000 bushels, a record one.

But of all on the list of substitutes, corn is king. Corn is our own peculiar contribution to the world's dinner table; it is our own native grain. The chief corn producing states are Illinois, Iowa, Missouri, Nebraska and Indiana, but corn is grown all over the country. Our 1917 corn crop was a bumper one, 3,159,494,000 bushels.

Corn is for every section of the country. Every American can elect it to be the greatest general in the food fight, the general to lead the food forces to a victorious finish.

Can Your Garden Surplus With a Hall Canner

To help you carry out your part of the food conservation program, we offer you the Hall Canner -- an apparatus which, for simplicity of construction and economy of operation, has no equal. It is a complete cold pack canning outfit approved by food conservation experts.

Price of Canner, \$4.50

*Complete with Six Racks, and
easy-to-follow directions*

(Wyoming, Montana, Colorado, Texas and West, \$5.00)

The low cost is but one of many attractive features. Its compact shape adapts it to any stove. A single burner is sufficient to operate it. Cans maximum quantity with minimum fuel. Six jar holders are so arranged that the handles extend beyond rim of canner, acting as perfect insurance against scalding.

The Hall Cold Pack Canner cans in one operation from one jar to 12 quart or pint jars, some styles 18 pint jars. It is made of 28 gauge galvanized steel, will last practically a lifetime. Weighs eleven pounds net. Shipped complete, ready for use, with easy-to-follow directions.

A FREE Canning Table that should be in Every Garden Home

We want every reader of this magazine to have our special Time Table and directions for successful practice of The Cold Pack Method of Canning. Everything advocated is strictly in accordance with data furnished by United States Government Food Experts.

This time table tells you at a glance how long it takes to sterilize fruits and vegetables, how much boiling fluid you should use, how much sugar is required, etc., etc. Be sure to write at once for your free copy of this instructive leaflet.

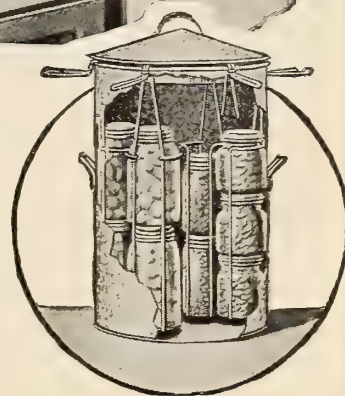
Order Your Hall Canner TO-DAY!

The Hall Cold Pack Canner is guaranteed to do satisfactory work and is sold by first class dealers throughout the country. If your dealer cannot supply, we will ship you one direct, express prepaid, on receipt of above price. Do not allow your garden surplus to go to waste. Order a Hall Canner at once.

Hall Canner Company

Dept. G

Grand Rapids, Michigan





Plant Peonies This Fall!

They are among the hardiest of all hardy plants, as the past exceptionally severe winter proved. We have been growing Peonies for over twelve years, and know that they are among the few flowers that never disappoint. Our rigid system of testing all enables us to offer only top-notchers, and these we furnish

Guaranteed True-to-Name

Our collection of over 300 distinct and meritorious kinds includes the best French and English varieties, besides the largest stock in the East of Brand's Famous New American Seedlings. Because we grow all in large quantities, we offer them at reasonable prices, of a quality to please the most exacting hobbyist. Over 100 of the best French and English varieties are available in four distinct sizes.

Ask for Your Free Copy of Catalogue

It's a reliable index to all that's worth-while in Peonies, Iris, Hardy Phlox, etc. Fall is the time to plant all these; now is the time to plan and order them. Let our catalogue help you select sorts that best suit your fancy. We'll satisfy you through conscientious service.

BABCOCK PEONY GARDENS
R. F. D. No. 79, Jamestown, New York

Plant Supports Can Your Own Tomatoes

You will then know they are clean and wholesome. By using the ADJUSTO Plant Support which is low-priced and lasts a lifetime, the fruit will be held up off the ground, causing the tomatoes to ripen from 1 to 2 weeks earlier.

The ADJUSTO, adjustable to any height, is equally good for Roses, Dahlias, Hydrangeas, Peonies and every bush and shrub that needs a support. Ask your dealer, and if he has none in stock, write us.

FORREST SEED CO., Cortland, N. Y.

COMING EVENTS CLUB & SOCIETY NEWS

Meetings and Lectures in July

(Following dates are meetings unless otherwise specified)

1. Larchmont, N. Y., Garden Club.
2. New Bedford, Mass., Horticultural Society.
3. Garden Club of Pleasantville, N. Y.
4. Marshfield, Mass., Garden Club.
5. Pasadena, California, Horticultural Society.
6. Lake Geneva, Wisconsin, Gardeners' & Foremen's Association.
8. New York Florists' Club, Grand Opera House Building, New York City, N. Y.
9. Garden Club of New Rochelle, N. Y.
10. Rochester, N. Y., Florists' Association.
11. Park Garden Club, Flushing, N. Y.
12. Garden Club of Ridgefield, Conn.
13. Valdosta, Ga., Floral Club.
14. School Garden Association of America, Pittsburg, Pa.
15. Short Hills, N. J., Garden Club.
16. Nassau County Horticultural Society, Glen Cove, L. I.
17. Lenox, Mass., Horticultural Society.
18. Westchester, N. Y., and Fairfield, Conn., Horticultural Society.
19. Dobbs Ferry, N. Y., Horticultural Society.
20. Salisbury, Conn., Garden Club. Lecture: Little Known Vegetables.
21. Marshfield, Mass., Garden Club.
22. Dahlia Society of California, Palace Hotel, San Francisco, Cal.
23. Horticultural Society of Pasadena, Cal.
24. Park Garden Club, Flushing, L. I.
25. Garden Club of Richfield, Conn.
26. Dobbs Ferry, N. Y., Horticultural Society.

American Rose Society

THE National Rose Garden at Washington, D. C. was officially visited by the American Rose Society on May 27th, and observations of the varieties growing made by the Judges (Julius Roehrs, Charles E. F. Gersdorff, and Leonard Barron). The observations are taken from the varieties as they stand on the day of the visit. The following were noted:

CLIMBERS—Flower of Fairfield, Pearl Queen, Silver Moon, Oriole, American Pillar, Queen



View of National Rose Test Garden, at Arlington Farms, Washington, D. C.

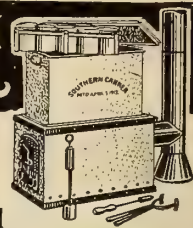
Alexandra, Rubin, Wartburg (not of best color), Mrs. Flight, Dr. W. Van Fleet, Graf Zeppelin, Goldfinch, Climbing American



The Judges ready for work. Left to right: Julius Roehrs, Charles E. F. Gersdorff, and Leonard Barron

(Continued on page 276)

SOUTHERN CANNER



CANNING IS CONSERVATION

Canning Saves Food

Canning is a patriotic duty, a national necessity—it is conservation and co-operation with the Government's food programme of the highest type.

Can and create greater stores of food for America and her allies. Install a simple \$25 or \$50 outfit on your place and can all surplus fruits, berries, vegetables—everything that grows.

Your Chance To Help

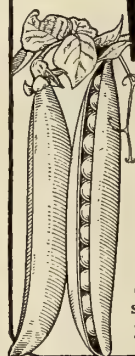
Don't let a single food product go to waste. Food will win the War and this is YOUR chance to help.

With a Southern Canner you can do exactly as fine work as the big canners, using either glass jars or tin cans. With each outfit comes a complete book of instructions. It's all so simple the work can quickly be turned over to the servants.

Consider well this chance to help. Then write for catalogue.

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Chattanooga Tennessee.

Vegetable Lore



What to Plant—How to Plant

A MAGAZINE for the benefit of the amateur gardener. Its aim is to teach planting, growing and cooking of vegetables. An all-year companion of the home gardener. No advertisements—no high-sounding terms. Just truthful, understandable advice for the happy men and women to whom the garden is a playground and a patriotic necessity. Full value to subscribers in excess of claims or money refunded. Issued monthly—sample free—\$1.00 per year.

MAURICE FULD, 1457 Broadway, New York

FARR'S

Dahlias and Chrysanthemums

Dahlias. A selection from more than 1200 sorts, including the best old favorites, the newer introductions, and the novelties.

Chrysanthemums. The best varieties for outdoor blooming in normal seasons. Set this month should bloom in autumn.

Send for special list of Dahlias, Chrysanthemums, Tree Peonies, Flowering Shrubs, and Perennials of distinct merit.

BERTRAND H. FARR

Wyomissing Nurseries Company
104 Garfield Avenue Wyomissing, Pennsylvania



Sash Greenhouses Ready-made

These Sunlight goods are established as the standard of efficiency and economy.

Order in Summer and make sure for Fall, Winter and Spring work.

Ask for catalogue of Garden Outfits. Free.

Sunlight Double Glass Sash Co.
937 E. Broadway Louisville, Ky.



Keep Your War Garden at work this summer

producing Vegetables for fall and winter use. Many of these are sown during July and August. Our new

Midsummer Catalogue

will advise you on the subject and tell the best varieties to plant. It also offers Celery and Cabbage Plants, seasonable Flower Seeds, Farm Seeds for Summer sowing, Potted Plants of Roses, Hardy Perennials, Shrubbery which may be set out during the summer, Decorative Plants, etc. Also a choice selection of Strawberry Plants, pot grown, which will give a full crop next year.

Write for a free copy and kindly mention this publication.

HENRY A. DREER

714-716 Chestnut Street, Philadelphia, Pa.



Why Handicap Your Flowers?

Half the beauty of cut flowers is in their "setting." A most appropriate container for any kind of flower will be found in

This Beautiful "Moss Aztec"
Vase—\$1.00 Postpaid

Its design, execution, and general character are fully in keeping with the high standards that have made "Moss Aztec" Pottery the choice of the discriminating. Dimensions: 10" high, 4 1/2" wide. Order to-day as No. 173. Catalogue Free.

PETERS & REED POTTERY COMPANY, South Zanesville, Ohio

ORCHIDS

Largest importers and growers of
ORCHIDS in the United States

Send twenty-five cents for catalogue. This amount will be refunded on your first order.

LAGER & HURRELL
Orchid Growers and Importers SUMMIT, N. J.

SUNDIALS

Real Bronze Colonial Designs
From \$3.50 Up

Also Bird Baths, Garden Benches, Fountain Sprays and other garden requisites.

Manufactured by
The M. D. JONES CO.
Concord, Mass.

Send for illustrated Price-List

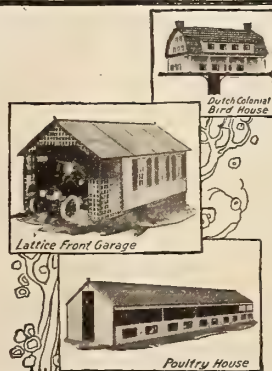


*Enjoy Your Garden the Year Around
through Kodak Records*

Eastman Kodak Co., Rochester, N. Y., *The Kodak City*

If- you have not read the best dog story ever written—or if your boy has not—buy "Bob, Son of Battle" at your nearest bookstore and you will.

Published by
Doubleday, Page & Company
Garden City, New York



HODGSON *Portable* HOUSES

How many times have you wished you owned a bungalow in the country where the glorious fresh air and sunlight are not contaminated by the dirt and dust of the city? Your wish can be easily realized. Buy a small house on the Hodgson plan. Select the house you want from our illustrated catalogue. We then build it at our factory and ship it to you in sections all ready to put up. No trouble. No dirt. No extra expense. The great outdoors is calling you to health and happiness. Answer by sending for catalogue.

E. F. HODGSON COMPANY

Room 228, 116 Washington Street, Boston, Mass.

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When it comes to Greenhouses come to Hitchings & Co.

Send for Catalogue

NEW YORK BOSTON
1170 Broadway 49 Federal St.

Midsummer Bloom

Learn to care for your Roses through Summer's heat and drought. You can enjoy a constant succession of bloom, if you follow the simple directions given in

"How to Grow Roses"

This rose lover's manual fully explains how to select, plant, prune and spray roses. It gives a helpful "Calendar of Operations" for year-round convenience. Handsome Library edition; 121 pages—16 in natural colors. Price \$1 postpaid including coupon worth \$1 on the first \$5 order for plants from our free catalogue. Learn to grow your own roses. Send to-day.

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Box 24, Pa.
ROBERT PYLE, Pres. A. WINTZER, Vice-Pres.
Backed by 50 Years' Experience

Our 1918 Seed Catalogue

is called "The War-time Flower Garden." It lists nothing that is not well worth growing; all undesirables have been discarded. Yet it covers everything in

Seeds, Plants and Bulbs

that is essential to a perfect garden. Shall we mail you a copy?

HEATHERHOME SEED & NURSERY CO.
(Formerly The Knight & Struck Co.)
258 FIFTH AVENUE NEW YORK CITY

All the Sunlight All Day Greenhouses

King Construction Co.
425 King's Road North Tonawanda, N. Y.
Write for Booklet



(Concluded from page 274)

Beauty, Countess M. M. Chotek, Bess Lovett and Dazzling Red.

TEAS AND HYBRID TEAS.—Laurent Carle, Gruss an Teplitz, Mary Countess of Ilchester, Mme. Paul Euler, Mrs. George W. Kershaw, Avoca, Cook 512, declared to be very promising, Mme. Leon Paine, Lady Ashtown, Mme. Maurice de Luze, Pink Killarney, Lady Alice Stanley, Kaiserin Augusta Victoria, British Queen, Mrs. Wakefield Christine Miller, La Tosca, Lady Ursula, Colonel R. S. Williamson, Climbing Teplitz, White Killarney, Mrs. A. R. Waddell.



Planting for the Future

CONSERVATION is the keynote, on account of the scarcity of food—and as that is occasioned by scarcity of labor let every effort tell. Have the best seed. Plow only as much as you can bring to perfection, but *plant to the limit*. Plant vegetables of the highest food value and those least subject to disease. Prevent disease by spraying every two weeks with bordeaux and put with this arsenate of lead to destroy the larvae of insects. Spray constantly potato, tomato, cabbage and pepper and eggplants. Keep the soil stirred about the plants to conserve moisture especially during the heated term. Water with manure water, as keeping plants well nourished gives them strength to resist disease and also brings them to maturity quicker. Keep weeds down, otherwise insects will be harbored and cutworms will infest the garden for another season's onslaught. Keep all space occupied, and as soon as one crop is off put in another—but plant a vegetable of a different character. A root crop should follow a leaf crop. That is; beets, carrots or salsify can follow cabbage or lettuce. Keep up successional sowings of snapbeans and corn and beets.

UP TO end of July plant Country Gentleman and Stowell's White Evergreen corn; later than this return to the early corns such as Golden Bantam and Adams Early. Put in the last planting of tomato plants a main crop kind such as Stone and Greater Baltimore. Many will not ripen before frost but can be gathered green, each one wrapped in paper and put away on shelves in a cool cellar to ripen throughout the winter.

Put in celery plants. See method of culture in July 1916 GARDEN MAGAZINE. Set out fall cabbage plants and sow seed for winter cabbage in cold-frames—Autumn King is a splendid keeper. Transplant beets to the open ground about six inches apart. They are a good winter vegetable and come in before the first tender Spring onions.

A few plants of Scotch kale put in hills two feet apart and allowed to grow large comes in as an early fall salad or greens; Danvers half-long carrots (to remain in ground for winter use); Blood Turnip beet—and witloof chicory or French endive. Directions will be given latter how to treat this vegetable to have all winter. Plant late Irish potatoes.

(Continued on page 278)

BRAND'S Famous "America's Best" **PEONIES** are the exclusive productions of America's Foremost Peony Specialists. No other nursery pays as much attention to the creation of really superior peony novelties as Brand's while the rigorous Northwest affords ideal climatic conditions for their perfect development.

Superb Seedlings of Proven Value

It generally takes ten years under our system, for any seedling to prove its value to us, and five years longer to produce it in limited quantities for restricted sales.

Brand's "America's Best"

are new and novel, distinct and different, and equal or superior to the world's best. You owe it to yourself to study our stocks which are of ironclad hardiness. They make a permanent investment. Write us TO-DAY for descriptive price list.

BRAND PEONY COMPANY

540 Lumber Exchange

Minneapolis, Minnesota



Plant Evergreens

Their hardiness, disease resistance and long life stands unchallenged. Plant them for hedges, windbreaks or as specimen trees.

We have over 800 acres of selected stock. The collections in our F. & F. Nurseries in N. J., and Bloodgood Nurseries on L. I., include every important kind in the dwarf, half tall and tall classes. Est. 128 years. Write to-day for Free Catalogue and Prices

AMERICAN NURSERY CO., Singer Building, N. Y.

Tulips Mixed Darwins, \$2.00 per 100. Mixed May-Flowering, \$1.60 per 100. 50 of each, \$1.80. All postpaid.

Peonies 20 Varieties, doubles and singles, postpaid, \$2.50.

Also Irises and Narcissi. Send for price-list

ORONOGO FLOWER GARDENS Carthage, Mo.

MR. ROBERT PYLE—the well-known Garden Lecturer and Rosarian invites correspondence from garden lovers and societies. Subject—"The American Rose Garden" illustrated with finely colored lantern slides. Address: West Grove, Pa.

IF you know of a home with a service flag in the window, see to it that a certain little war tale filled with the spirit of Lincoln finds its way into the heart of that family. They need its message there. It costs only fifty cents and is called

"The Full Measure of Devotion"

By

DANA GATLIN

DOUBLEDAY
PAGE & CO.GARDEN CITY
NEW YORK

For Sale At All Bookstores

Dayton Rotary and Oscillating Sprinklers

will cover a circle, 80 feet in diameter, or a half circle, of 3 to 40 ft. radius, with as fine a spray as a summer rain. Dayton Sprinklers are the ideal device



for Watering Lawns and Gardens

Of simplest make and best metal construction, trouble proof and long lasting. Adjustable to any kind of stream, operated with twenty pound pressure. Type shown is mounted on stand for hose connection. Send for descriptive price list and Special Offer TO-DAY.

Dayton Irrigation Co., Dayton, Ohio.

Hardy Phlox

Are the peer in the garden blooming during all summer until frost. We have the last word in phlox.

Send for list; it's free.

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STATE HOSPITAL STATION
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Deming Water Supply for Country Homes

32-page Bulletin of water-supply facts and installation suggestions gladly mailed free; describes Deming air pressure systems—convenient, dependable, simple—operated by motor, hand pump, gasoline engine or windmill. Write to-day to

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Beautify Furniture

Protect Floor and Floor Coverings from injury by using

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If your dealer will not supply you write us.

ONWARD MFG. CO.
MENASHA, WIS. DEPT. T.

Traxler's Collection of Fragrant Peonies

This collection contains all of Mr. Brand's "America's Best," all of the world's best, and nothing but the best. Nothing but fragrant varieties and only the best of these. Why not try a shipment of our thrifty, vigorous, northern grown stock?

Send for price list.

JOHN A. TRAXLER, 225 West 24th St., Minneapolis, Minn.

Rudyard Kipling

is a passionate Ally. Read his great poem, "France," in "France at War," a book about England's auxiliary fleet. This volume should not be confused with Kipling's new book of short stories, his first in seven years.

Doubleday, Page & Company
Garden City, New York



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This new fencing system enables you to make any size yard desired and move it to other locations at will. To erect simply push legs into the ground.

Substantially constructed from 1 1/2 inch Diamond mesh heavy galvanized wire fabric and galvanized round iron frames with one inch galvanized Hexagon Netting along the bottom, twelve inches high. Strong and durable and its portable feature makes it readily adaptable for fencing in young chicks or ducklings as well as grown chickens, ducks, geese, etc. Also used to advantage for enclosing small vegetable garden plots, dog runways, etc.

Made in standard size sections as follows:

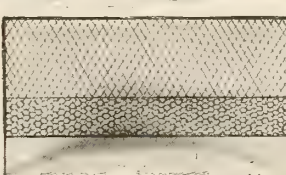
7' long x 5' high		\$3.75 per section
2'6" x 5' (gate)		1.60 "
8' " x 2' "		2.00 "
6' " x 2' "		1.60 "

PLUS 10% TO THE ABOVE PRICES, F. O. B. BUFFALO

These prices are effective April 1st, 1918, and are for orders consisting of six sections or more. Above sizes can be shipped from stock immediately. Special sizes made to order on short notice. Send money order, check, New York Draft or currency by registered mail NOW! Don't delay, freight conditions are bad and delay in ordering may disappoint you in delivery.

Our booklet No. 67AA will be sent upon request with six cents to cover postage. A trial order will convince you of the merits of this system.

BUFFALO WIRE WORKS CO. (formerly Scheeler's Sons) 467 Terrace, Buffalo, N. Y.



ENLARGED VIEW



POT-GROWN STRAWBERRIES

OUR PLANTS give a crop of finest berries in two to ten months from planting—the Everbearing varieties in two months; the others the following June. A full list of the best varieties, including the remarkable **Van Fleet Hybrids**, covering the whole season from earliest to latest.

Our Booklet No. 2 of Pot-Grown Strawberries tells all about them; how to prepare the ground and cultivate. **IT IS FREE.** If you would have bigger and better strawberries than your neighbors or you have ever had before, plant **LOVETT'S POT-GROWN STRAWBERRY PLANTS.**

Strawberry Specialists for forty years

J. T. LOVETT, Box 125, Little Silver, N. J.



HICKS BIG EVERGREENS

can be successfully transplanted, in midsummer to add a wealth of immediate beauty to your lawn. Winter or summer, their stately beauty and warm green color make a picturesque outlook.

Use evergreens for seclusion, hiding unsightly views, small and large hedges. We ship successfully 1000 miles and guarantee to grow. Send for catalog.

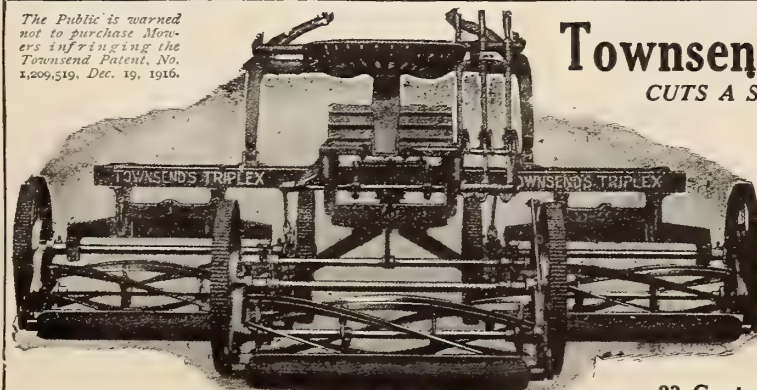
Hicks Big Trees Save 10 Years

HICKS NURSERIES
Box M Westbury, L. I., N. Y. Phone 68



Summer

The Public is warned not to purchase Mowers infringing the Townsend Patent, No. 1,209,519, Dec. 19, 1916.



Townsend TRIPLEX

CUTS A SWATH 86 INCHES WIDE

Drawn by one horse and operated by one man, the TRIPLEX will mow more lawn in a day than the best motor mower ever made; cut it better and at a fraction of the cost.

It will mow more lawn than any three ordinary horse-drawn mowers with three horses and three men.

Write for catalogue illustrating all types of Lawn Mowers

S. P. TOWNSEND & CO.
23 Central Avenue, Orange, N. J.

IMP SOAP SPRAY

Sure Insect Killer

THE use of Imp Soap Spray on fruit trees, garden truck, ornamental trees, shrubs, etc., will positively destroy all insect pests and larva deposits. Quite harmless to vegetation. Used in country's biggest orchards and estates. Very economical—one gal. Imp Soap Spray makes from 25 to 40 gals. effective solution. Directions on can. Qt., 55c.; Gal., \$1.90; 5 Gals., \$8.50. F.O.B. Boston. Genuine can has Ivy leaf trade mark. Your money back if Imp Soap Spray doesn't do as claimed. Order direct if your dealer can't supply.

F. E. ATTEAUX & CO., Props.
Eastern Chemical Co. BOSTON, MASS.

American-Grown Trees and Evergreens

Summer is the time to make up your planting lists and lay out the Fall planting—our Booklet "Suggestions for Effective Planting" will help you.

Andorra Nurseries

Wm. Warner Harper, Prop.

Box 100
Chestnut Hill
Phila., Penna.

Irises, Peonies, Hardy Plants and Japanese Garden Specialties

Send for our illustrated 1917-18 Catalogue

Over 600 fine varieties of Irises

Rainbow Gardens 1980 Montreal Avenue
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Conserve

Energy, Labor, Time, Space

In these days of conservation the Hill Dryer more than does its part and its cost is offset in many ways. Saves dragging around a heavy clothes basket or reaching to back-breaking heights.

☛ Saves time, for you hang the clothes simply by standing in one place and pulling the Dryer toward you. ☛ Is compact and when not in use is easily taken down, leaving your lawn clear of all obstruction. ☛ Made in three styles for lawn, roof or balcony. Also in three sizes. Write for folder and prices of different sizes and types.

Hill Clothes Dryer Co., 50 CENTRAL STREET
WORCESTER, MASS.

EXCELSIOR RUST PROOF FENCE

For private gardens, lawns, estates, etc., as well as public grounds. Made of heavy, cold-drawn steel wires. Held together by patented steel clamps. Galvanized AFTER making, which makes it rust proof. Write for catalogue B.

Ask your hardware dealer for EXCELSIOR rust proof tree guards, trellises, bed guards, railings, gates, etc.

WRIGHT WIRE COMPANY, Worcester, Mass.

(Concluded from page 276)

HARVEST onions now. When they turn yellow and topple over pull them up and let them lie on the ground during the day but take them in before night and spread out on the floor, drying them with tops on. Tops should not be taken off until ready to use. Pea and bean vines should be dug into the soil and allowed to rot to make humus.

Asparagus should not be cut longer than two months, which is no later than the middle of June. After this nitrate of soda or water from the manure barrel should be used to fertilize the plants and aid the growth, to build up strength for next year's cutting.

SAVE seed of everything possible as they will be more and more difficult to procure—and everyone must if possible have a garden. Let the beans dry on the vines and gather before the hulls pop open else the seed will drop out and be lost. Butter beans, navy beans, and blackeyed peas dried on the vines are not only better for seed, but are better flavored for table use than those that are canned. Be careful not to let them remain too long on the vines as they will mildew. After shelling spread out on a tray in the sun for a day. The Kentucky Wonder snap bean is profitable. It is a climber and can be trained on a pole or fence. It is very prolific, sweet, tender, and stringless.

LOOK after the Roses and spray for chafers and mildew with bordeaux and arsenate of lead. Slug-shot will kill the worms on rose leaves, and cabbages and potatoes if dusted on in the early morning.

Transplant the Asters from coldframes to border, and plant with them a few pepper plants. The beetles will eat the peppers in preference. Hollyhock and Foxglove should have the stalks cut down to the ground immediately after blooming and they need spraying occasionally with Black-Leaf 40 for the aphids. Cornflower and Chrysanthemums are also troubled by aphids.

Plant Dahlias and Gladioli for late blooming. Sow seed of perennials in coldframes at end of this month to be transplanted in open border in Spring.

J. M. PATTERSON.

Time to Stop Thinning Fruit

IT IS a good plan to carry the thinning practice well into harvesting. Some varieties especially of apples and pears ripen unevenly during several weeks. So if the trees have been properly trained the specimens that ripen first should be picked as soon as they reach usable size, the others being left till later. These will readily increase in growth and improve in color and quality so that in two weeks most of them will be fifty per cent larger than they otherwise would have been. The balance will increase similarly when a second picking is made. This practise is very popular among growers of apples in West Virginia and adjacent Pennsylvania, Maryland, and Virginia. It has its chief application to those varieties which ripen during summer and the first half of autumn, though in the area mentioned it is employed in the harvesting of winter apples—but the growing season is several weeks longer than in the latitude of New York City and points still farther north.

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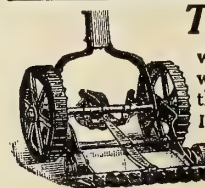
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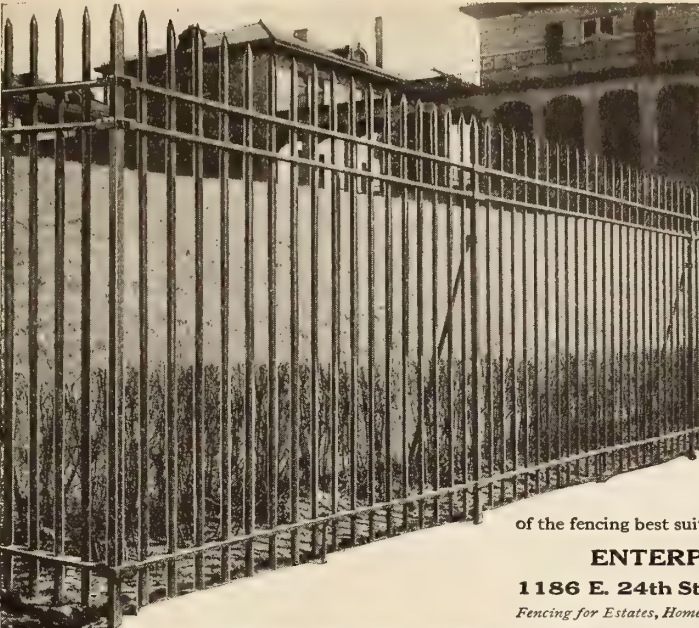
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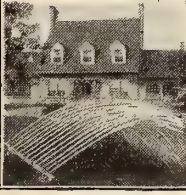
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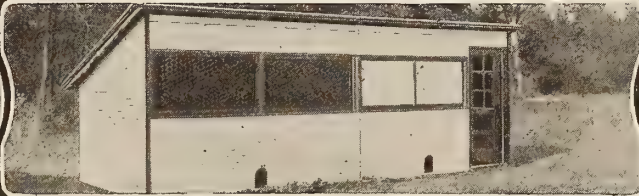
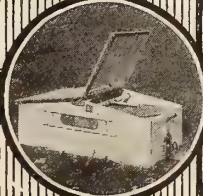
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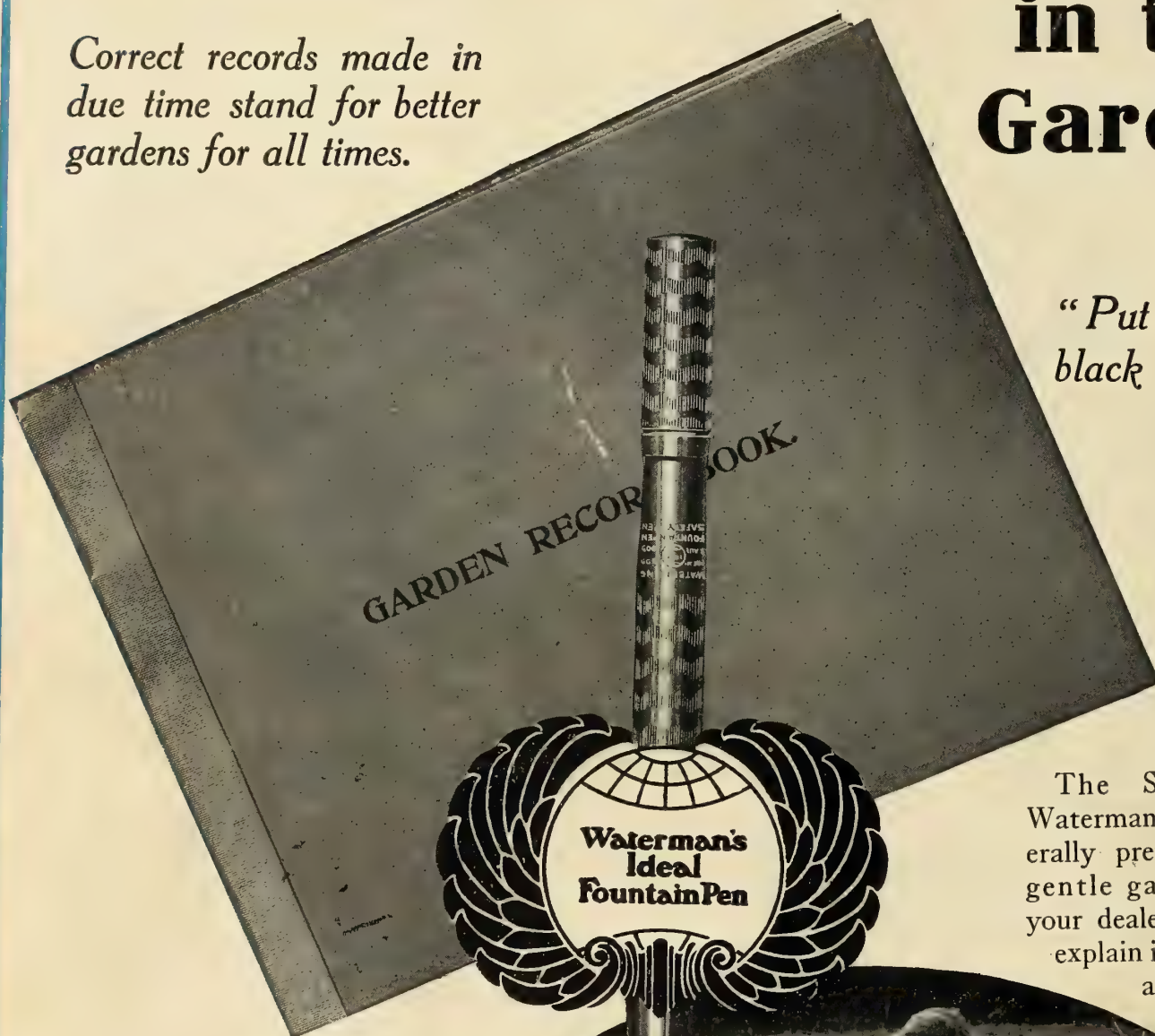
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